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# LONG ISLAND MEDICAL JOURNAL

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HENRY GOODWIN WEBSTER, A.B., M.D.
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# SURGICAL TREATMENT OF CHRONIC INTESTINAL STASIS.*

Lewis S. Pilcher, M.D.,

Brooklyn-New York.

PROBLEMS pertaining to intestinal stasis seem to dominate the medical field at the present time. Forty years ago carbolic antisepsis occupied the stage. Nearly synchronous was the development of the superficial surgery of the uterus and the perineum, when to uterine flexions and malpositions and congestions we ascribed so large a proportion of female ills. A little later the ovaries relieved the uterus of some of its burden and received a degree of surgical attention that nearly approached a scandal.

Then ptosis of the kidney floated upon the stage. When we discovered that the kidney could be readily exposed, and anchored, even removed if need be, and that in many cases of malaise and of obscure chronic ill health a prolapsed kidney could be made out, it was inevitable that the displaced kidney should be considered as the primary cause of the condition in question, and its elevation and fixation accepted as the chief indication for treatment. It was astonishing how many movable and prolapsed kidneys were found when search was made for them! Too often the nephropexy was not followed by the relief that was hoped for,.though many brilliant results must be attributed to its practice. The appendix vermiformis has played an even greater role in monopolizing surgical thought and effort than any of its predecessors. It is still with us. I need but mention it without enlarging upon it. I have mentioned these different phases of excessive and extravagant surgical activity, not to minify nor dispute the positive advance which they have marked in our recognition of the real causes of many surgical ills and in an ability to remedy them, but rather to illustrate the frequent and natural tendency to violate the proper perspective in our dealings with professional questions. Ultimately, as the result of the corrective influences of time and discussion and experience, the earlier undue enthusiasm and false proportions are sure to be corrected, and the proper relative position and importance of any condition assigned to it. For its influence in contributing to such a result such discussions as that of the present occasion are of value. It is therefore in the spirit of reasonableness and sound judgment that I would desire myself to approach the subject under discussion at this time.

Intestinal stasis is a relative term. In its highest degree it requires a complete obstruction of the bowels, or a complete arrest of the peristalsis of the bowel wall to produce it. A lessened peristaltic activity is a normal characteristic of the large bowel. A greater part of the changes in the ingesta required for fitting it for absorption and body nutrition have been accomplished before the large intestine is reached, and so large an amount of absorption has been effected that the elimination of the whole of the large bowel from farther contact with the nutritive mass lessens little, if any, the adequateness of nutrition. The function of the large bowel seems to be one of convenience rather than necessity. It is a receiving station, a temporary retention depot, where the residue of the ingested mass, plus the fluids and excretions added to it from the glands of the intestinal tube above, may be retained and finally concocted until it shall be in a physical state most suitable and proper for voiding, and a time for such voiding convenient for the individual may have been secured. The conditions presented by the more slowly moving fecal mass are favorable for bacterial development and multiplication and the formation of the complex and multiplied products of their life processes. Our present more specific knowledge of the bacterial and chemical changes going on in materials accumulating in the intestinal canal beyond the ileo-cecal valve quite justifies the conviction that has always been entertained by intelligent men that the undue retention of this offensive material within the sphincteric gateway of the body was undesirable and dangerous. Such undue retention, habitual and persistent, I understand to constitute *chronic intestinal stasis*. The results of such stasis have been fully discussed by my colleagues. We recognize the ordinary systemic reaction in the mental depression and general malaise, the headaches and loss of appetite, and the sluggishness of the peripheral capillary circulation. We have learned that many cases which have masqueraded under the names of neurasthenia, hysteria, gastralgia, etc., are really due to a self-poisoning from retained intesinal contents. We appreciate that there is some force in the claim that it may have a direct and leading influence in the development of such secondary conditions as tuberculosis, cancer, epilepsy and chronic arthritis. We appreciate that it is frequently accompanied by chronic inflammatory conditions of the appendix, the gall bladder and the kidneys, and that closely related to it are ulcers of the duodenum and the stomach.

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* Read before the Kings County Medical Society, May 19, 1914.

We have, therefore, to do with an important and far-reaching pathological state for the control and relief of which the resources both of internal medicine and operative surgical effort may be called upon.

There are certain definite anatomic conditions that seem to have been originally devised for impeding the rapidity of the movements of the fecal mass after its entrance into the caecum. These are the hepatic and the splenic flexures and the convolutions of the sigmoid. Anything which exaggerates the obstacles which these normally present to the onflow of the colonic contents is a potential cause of fecal stasis and all its train of ills. By reason of the rather firm attachments to the parietes of the two flexures of the colon, these are comparatively fixed points for the bowel. The movable portion of the colon between these two points is swung from the greater curvature of the stomach by the meso-colic omentum.

A ptosis of the stomach means also a ptosis of the transverse colon; a ptosis of the transverse colon means an accentuation of the angles at these flexures and more particularly of the splenic angle. It is not so much because the colon is down in the pelvis that the stasis occurs, but because the greater acuteness and fixity of the splenic angle that is produced by the descent of the colon prevents that portion of the colon from readily emptying itself. In the milder degrees of stasis drugs that excite more powerful peristalsis may furnish the necessary *vis a tergo* to propel the contents of the colon over the obstacle; or a properly planned and applied abdominal binder may hold up the stomach, and take the obstacle out of the way. When, however, cathartics and binders fail or become intolerable, the indication for surgical operative intervention is plain. The condition of gastro-colo-ptosis we have learned to appreciate as the real underlying cause of many cases of intestinal stasis and of the train of symptoms that such stasis produces.

There are two methods that are being tried out for its relief. (a) The gastropexy of Rovsing; (b) the gastro-colic plication and parietal fixation of Coffey (omentocolopexy).

In the method of gastropexy the stomach is replaced in the epigastrium and fixed there by a series of sutures which are inserted into its anterior wall and brought out through that part of the anterior abdominal parietes with which the stomach is in contact. Firm adhesions form which keep it in position.

I have not yet resorted to this procedure, but Rovsing reports some 500 cases in which it has been done by himself and others, in which the demonstration is clear that it is feasible and efficient, and free from objectionable sequellæ. The fixation of the stomach to the anterior parietes does not seem to interfere with its functions and the results of the ptosis, both immediate and remote, we can readily believe to be permanently overcome. Hepatopexy and plication of the round ligament of the liver may be added if the liver is prolapsed. The narrowness of the subdiaphragmatic space—the epigastric dome—which is an accompaniment of many of these cases of gastroptosis, may be alleviated by a plastic upon the recti muscles and their sheaths which widens the anterior wall of the epigastrium. In the omentocolopexy of Coffey the gastrocolic omentum is gathered into transverse folds by a series of sutures which are inserted into this membrane. These sutures, from six to eight in number, pass from the greater curvature of the stomach to the upper border of the transverse colon. Each suture in turn, beginning on either side of the median incision which exposes the parts, is made to catch the peritoneal surface of the anterior parietes and tied, so that when all are tied there is a row of stitches extending across the front of the abdomen on its peritoneal side which fastens the plicated gastrocolic omentum to the anterior parietes. Above it lies the stomach well supported in its normal position; below it swings the transverse colon lifted up and held in the best position to transmit its contents around the splenic angle. This procedure I have resorted to in a number of instances and I have found it very satisfactory in its immediate results and thus far permanent in its control of the ptosis.

Thus far I have said nothing of the relation of pericolic films and bands to chronic intestinal stasis. Ptosis may or may not be complicated by their presence. If they are present, they form an imperative indication of their own for surgical interference. Their presence should be sought for as the first step in an abdominal exploration, and if found present in a degree and position to interfere with the normal transmission of the intestinal contents, they should be removed or divided until the bowel is evidently no longer restricted by them. I would emphasize the fact that I am speaking only of *such films and* *bands as may be present in a degree and position to interfere with the normal transmission of the intestinal contents!* Questions of etiology are entirely academic from the present point of view. It is only as elements contributing to chronic intestinal stasis that I speak of them here. As such they are extremely common and very important. I have fully discussed them in other published papers. The effect of such bands on the left side confining and angulating some part of the sigmoid flexure has also been the subject of important papers by Delatour.

Chronic inflammatory conditions in and about the cecum are of importance in that they interfere with the muscular contractility of that part of the colon; stagnation of the cecal contents is favored; dilatation of the intestine between the ileo-cecal valve and the hepatic flexure is produced; conditions favorable for the transmission of a low grade infection through the intestinal wall are created which results in the production of pericolic adhesions and bands that still further cripple the colonic peristalsis and aggravate the already present tendency to stasis of the intestinal contents. The relation of nephritic and perinephritic infection, of gall bladder infection, and of duodenal and gastric ulcer development to this cecal condition has become well understood and fully demonstrated, and needs but a mention here.

A chronically inflamed appendix is an extremely frequent attendant upon colonic stasis. Whether it is present as a primary cause or as a later result is of little importance when these cases come to the surgeon for treatment. It is now present as a complication that aggravates and perpetuates the condition of stasis and requires operative removal.

It has been seriously proposed to avoid the possibilities and disadvatages of colonic stasis by the removal *in toto* of the colon! This has been done in many instances of late years by Sir Arbuthnot Lane and his school, and according to the reports which have been published, with great benefit to the individuals deprived of their colons. The method is certainly radical and efficient so far as colonic stasis is concerned. I have never resorted to it myself.

The proposal to side track the colon by cutting off the ileum and implanting it into the sigmoid loops is a less heroic proposition than total colectomy and commends itself with less reserve to one's surgical judgement. The conditions of colonic stasis must, however, be rare in which either of these procedures are necessary to overcome the stasis. Rather are they likely to be necessitated by the presence of serious and intractable lesions of the colon itself.

In conclusion I would dwell with some emphasis on the fact that these gross and evident anatomical conditions which are found contributing to so many cases of chronic intestinal stasis and which can and should be removed by surgical treatment are not in the majority of cases all that demand the attention of the practitioner in his efforts to overcome the stasis and relieve its effects.

Surgery is not a cure-all in these cases. It is often a necessary element in the treatment; it removes obstacles, lessens difficulties, restores organs to those relations required for the normal performance of their functions, but there is always left a large field for hygienic, dietetic, mental and medicinal treatment whereby ultimate full restoration to good health can be secured. Surgery must not be expected alone to cure these cases, but it alone makes possible their cure.

# THE NON-OPERATIVE TREATMENT OF INTESTINAL STASIS AND ALLIED CONDITIONS.*

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INTESTINAL stasis and autointoxication are the latest fads of the medical world. Stasis is said to be the underlying cause of every abdominal complaint and lesion, while toxemia is said to be responsible for every imaginable disorder of the human mechanism. Are these terms now diagnostic catch-alls which, like gout, rheumatism, lithemia, the uric acid diathesis, malaria, and neurasthenia in the recent and remote history of medicine, have done such yeoman service; or have we reason to believe that we are, in fact, on the very threshold of a vast storehouse of knowledge of immense importance to mankind?

The fact of the matter seems to be that at the present time positive conclusions cannot be reached on many problems which involve the digestive tract and the disturbance of its functions. Intestinal stasis has been brought forward as the explanation of a large group of abdominal disabilities, but very little in the way of facts has been presented to substantiate this claim. The subject takes on added importance owing to the development of the idea that stasis results in a toxemia by which much in clinical medicine and pathology is to be explained. With the newer methods of diagnosis it is possible to reach more definite conclusions as to the disturbances of the motor function of the intestines, but how commonly abdominal disabilities are traceable to stasis is not easy to state at the present time. The entire subject of autointoxication is in an even more doubtful position, for the fact is that we have practically no knowledge as to why or when toxemia arises from the intestinal tract. The theory that it arises from intestinal stasis has been built up to explain conditions for which we have no satisfactory explanation. Going still further, a certain group in the profession would have us believe that toxemia of intestinal origin is the fundamental cause of conditions for which we have previously thought we had satisfactory explanations entirely remote from the gastro-intestinal tract. It seems to me that we may take one of two stands on the question of intestinal intoxication; we may believe, in spite of the lack of any accurate information, that we can recognize autointoxication from a symptomatology, and by the exclusion of other conditions which in our experience might conduce to such symptoms. On the other hand, demanding some objective basis for the belief that autointoxication accounts for clinical phenomena, we may turn to the search for evidence of intestinal stasis as a factor which tends to lend weight to the possibility of an intestinal intoxication.

## ETIOLOGY.

We know that the efficiency of peristalsis is dependent on the character of the ingested food and the gastric and hepatic secretions; and that it is influenced by abnormalities of innervation, essential muscular weakness and spasm; and also by obstruction to the lumen of the bowel. Obviously the widest variety of abnormalities may enter as factors into the production of ineffectual peristalsis. Much prominence has been given, in recent times, to certain conditions which are held to be productive of stasis, but we assuredly do not know at present the relative frequency and real importance of such conditions as Jackson's membrane, Lane's kink, undue fixation or mobility of the cecum, and of spasticity or incompetency of the ileo-cecal valve. It is not without good reason that opinions on the subject are so widely divergent.

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## DIAGNOSIS.

The diagnosis of stasis involves the determination that such a condition is present, the situation of its occurrence and the anatomical or physiological pathology which is responsible for it. Stasis may be shown by constipation, by the prolonged time of passage of certain substances recognizable in the excreta, and by the X-ray. Conclusions as to the site may be reached by the symptomatology, by direct abdominal examination, by direct examination of the distal end of the colon, and by X-ray studies of the bismuth meal. Determination of the causes is frequently one of the most difficult problems and in some cases may not be definitely settled even with all possible thoroughness of study. Practically on the clinical picture alone, we may be able to come to definite conclusions in many instances. This is true of a large percentage of simple constipations and the more serious intestinal obstructions of an acute or chronic nature, the clinical picture of which is usually so definite. The greatest difficulties are experienced in reaching conclusions in the group of cases with a long history of minor abdominal disabilities with very little in the way of definite subjective complaints or objective findings. The recognition of the clinical picture of chronic appendicitis and the relief of all symptoms by the removal of the more or less diseased organ, eliminates a large number of cases from the group of ileal or colonic stasis. Still more difficulty is found where stasis is proposed as the cause of a toxemia supposed to be giving vague, remote symptoms in various parts of the body. Even when the objective diagnosis of delay in the passage of residue through the bowel can be reached, we must necessarily be left somewhat in doubt because of the fact that we have no established normal. Every clinician learns to pick out groups of cases through their symptomatology and such diagnostic procedures as he commands. Through experience we get a fair idea of the etiological factors responsible for the derangement in these various groups, and learn to handle them with a success which is dependent upon the thoroughness of our diagnostic study.

## TREATMENT.

In the time permitted it will only be possible to sketch briefly certain ways in which conditions of intestinal stasis may be treated without operative interference.

*Diet.*—(a.) Peristalsis is stimulated by distention of the bowel and is made efficacious by the bulk of the residue it has to work upon. Prompt relief in may cases of mild stasis is so well effected by the institution of a bulky diet, that it should be consistently tried before adopting more troublesome or dangerous plans of treatment. In addition to the use of foods rich in cellulose the patient is put on agar in liberal doses. Absorbable fats such as butter, cream, and olive oil are well borne and are highly serviceable in some instances. In others, the use of the now much-exploited mineral oils, in proper dosage, is found valuable.

(b.) By raising the general nutrition and causing an increase of fat particularly in the abdomen, forced feeding is exceedingly important in the treatment of properly selected cases. A complete or partial rest cure may greatly enhance the benefits of diet by eliminating excessive expenditure of energy. Especially in the ptosis group, which presents sudden losses of body weight, forced feeding gives results which can be secured in no other way.

*Exercise.*—Very often systematic calisthenic exercises or out-of-door exercises are observed to have decided effects on the functional activity of the colon. Even where there are a number of factors, some possibly organic in their nature, which make for abnormality of function, improvement in the tone of the bowel may result in the overcoming of these abnormalities.

*Gastric and Hepatic Therapy.* The application of the proper treatment for essential diseases of the stomach results in such definite relief of stasis that its importance must not be overlooked. Much has been said in the past few years of stasis as a cause of peptic ulcer, and allied diseases. Certainly it is common to see intestinal conditions corrected by the medical or surgical treatment of ulcer, and here we may in fact have a vicious circle. Concerning hepatic disturbances we know very little, in spite of popular belief that biliousness and liver trouble explain so much. I believe, however, that we shall learn that the derangements of the liver are an important factor in the production of many clinical pictures, toxemias, if you will, which we cannot now interpret.

*Massage.*—The great value of massage in some groups of cases is a matter of frequent demonstration; but the difficulty of securing a properly trained operator is an important practical consideration. In those individuals afflicted with stasis from bowel atony and dilatation the best results are secured. Massage is also of service in carefully selected cases of stasis due to adhesions, and it is well worthy of a trial before attempting surgical relief, which is of doubtful value unless we have to deal with a small definite band of adhesions.

*Bowel Irrigation.*—Bowel irrigations are persistently carried out by some clinicians, but in my experience they have not proved of any permanent value. The simple form of household enema may reach through the colon with as much thoroughness as far more complicated procedures.

*Enemata of Oil.*—The injection of 8 to 16 ozs. of oil into the bowel at bed time and the retention of it through the night, is of value in a limited number of cases. Formerly I thought this procedure was serviceable in a far larger group of cases than later experience has proved it to be. Whatever permanent good has been accomplished by this plan of treatment has been limited to those cases where there has been apparent catarrh.

*Posture.*—The recumbent posture immediately tends to correct conditions of stasis which are not operative in the vertical posture. It is difficult to realize the distance that the stomach and intestines fall, when the body assumes the upright posture, without radiographic or fluoroscopic examination. As we study more closely into the matter, I think we shall find that a large proportion of all cases of stasis are at least predisposed to by ptosis. In a large proportion of cases enteroptosis is either a congenital malformation or a deformity developed early as a result of various conditions incident to childhood, such as nasal obstructions, rickets, and general undernourishment. There are, however, many complete or partial ptoses developed in later life as the result of pregnancy, loss of body weight, general asthenia, overloading of the colon, and relaxation of the abdominal wall. Possibly there are also certain conditions and accidents which make for relaxation of supporting structures. It is particularly in these cases that we have possibilities of angulation at fixed points. In a sense ptosis is a predisposing cause of stasis which becomes operative upon the addition of some other factors, such as the development of asthenia, the formations of adhesions, deficiencies in the amount of food, or the lack of bulky residue in the diet. It seems to me that one of the most important advances that will be made in medicine during the next few years is the more thorough analysis and treatment of these cases.

Treatment by posture intelligently carried out over a long period gives most excellent results. It seems very probable that the recumbent posture with the the patient on the abdomen, which has such remarkable effects in acute mesenteric ileus, is a great addition to the ordinary horizontal position in the treatment of many chronic anatomical derangements. This idea has been much elaborated by Goldthwaite who directs the patient to lie for some hours with the body partially inverted, the chest supported on a chair beside the bed.

Another valuable contribution to postural treatment made by Goldthwaite consists in the stretching out of the lower thorax and upper abdomen, which is attained by having the patient lie a number of hours daily with a narrow pillow under the lower thorax. The effect of this procedure is accentuated by deep inspiration and the rhythmic raising of the arms above the head. This seems to me a marked advance in the actual cure of the cases due to body deformities.

*Abdominal Supports.*—The failure of abdominal supports is largely traceable to the fact that we do not and cannot support the abdominal wall sufficiently to make actual corrections of the ptotic conditions. Corsets which press equally on the lumbar region and on the epigastrium and hypogastrium are theoretically and practically useless. Before complicating our judgment with too many procedures it is a good plan to try out the effect of adhesive plaster strips which actually support the lower abdomen, and finding this useful, insist on a more permanent type of support. Numerous illustrations might be given of the permanent betterment of health which has been started by the properly adjusted abdominal support and continued by a resulting better nourishment and strengthening of the abdominal wall by suitable exercises continued over a long period of time.

*Large Doses of Bismuth.*—Simple catarrh of the colon, which causes spasm, is often at least a factor in the production of stasis and is greatly benefited by very large doses of bismuth. In treating these cases I think a weekly or bi-weekly dose is usually sufficient.

*Hot Gelatin Injections*—Injections of 5 to 10 ozs. of 10 per cent gelatin at a temperature of 120 degrees have proved one of the most valuable treatments for catarrhal inflammation of the rectum and sigmoid, which so often leads to persistent spasm and obstinate stasis.

*Anti-Spasmodics.*—Essential nervous irritability, which leads to abnormal peristalsis is a condition not infrequently found as a cause of gastro-intestinal complaints. Atropine has undoubtedly a decided influence on some of these individuals whom the Germans call *Vagotonikers*. We have a number of different groups where there is this abnormal excitability of the vagus system and not infrequently a hyperthroidism enters into the picture. Crile's work on the adrenals is highly suggestive, and it may well be found that some of these cases which now baffle our efforts, may be benefited by the study and treatment of the ductless glands. One group presents the picture of mucomembranous colitis which in spite of large productions of mucus have been repeatedly shown not to be due to catarrhal changes. In another group there is more or less constant colonospasm without the passage of mucus. It is possible that in this group there is a spasm of the ileocecal valve which results in ileal stasis. Ill-advised and fatal operations have been performed on patients in this group who were at one time under my care. Anti-spasmodics, particularly bromide and atropine, with a careful diet, giving a bulky residue, is our chief therapeutic resource.

Intestinal stasis, as before affirmed, is a condition which may be due to a number of different structural and functional abnormalities of the bowel. The success with which these underlying conditions are handled by non-operative treatment depends in large measure upon the care with which the individual case is studied. As we acquire more thorough knowledge of abdominal derangements, established medical plans will be improved and new methods devised to cover groups of cases which we cannot now handle with success. To effect a cure in some cases it is obvious that surgery must be resorted to, but the hasty and thoughtless entrance of surgery into this field is to be deprecated. Certainly surgery is not to be advised simply because some medical measures have failed, for we must recognize that many of these cases are incurable in the very nature of things. Many times we are dealing with a pronounced grade of neurasthenia, hysteria, and hypochondria and the relief of one group of symptoms is followed by the out-cropping of another, frequently of a more troublesome nature. In the present state of our knowledge upon the subject, any surgery which is essentially experimental and accompanied by a high degree of mortality should be reserved for those cases that would seem to justify it by the presence of a great degree of disability, and only then with the full consent of those most interested in the results.

## THE NERVOUS REFLEX SYMPTOMS OF INTESTINAL STASIS.*

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THE term "reflex symptom" which once held so prominent a place in our theories as to the causation of the nervous symptoms arising from intestinal stasis, has almost completely passed from our recent neurological text-books; and its use was, in point of fact, often only a cover for our ignorance; for the steady advancement in medical science has clearly shown that most of the symptoms and conditions occurring in the nervous system from this cause, once considered as reflex, are in reality due to the action of toxic bodies on the nervous system which have been absorbed from the intestinal canal.

Such systemic poisoning may be due to the resorbtion into the system of toxic bodies which are normally formed in the body in the various processes of metabolism and elminated in bile. Normally these are, of course, rapidly removed from the body by the peristalsis of the intestine. Other toxic bodies are formed by the action of the various forms of bacteria found in the intestinal canal on its contents; and when the products are unduly retained in the same way may produce systemic poisoning.

That the funtcions of the nervous system, both in its physical and psychic spheres of action, can be profoundly altered by the presence of toxic bodies in the system, either of hetero- or autogenetic origin, is well shown in the action of alcohol on the one hand and the toxemia of typhoid fever on the other. It is also well established that different poisons may produce the same results; or the same poison different results in different persons, depending on the duration and intensity of the action of the poison, and upon the pre-existing inherited or acquired weaknesses of the nervous system attacked.

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Although it seems proven at the present time that many conditions of the nervous system can thus arise from the absorbtion of poisons from the intestinal canal, we seem to have little or no information as to their chemical composition or physiological actions: and thus we can not say from the effect produced in the body as to what poison was the cause. The study of these poisons has been too long neglected and he who successfully describes their nature and actions will confer a boon not only on the medical profession but on the human race as well.

As in other conditions of chronic toxemia, the action of the poison absorbed as the result of intestinal stasis is at first to produce a functional disturbance of the nervous system: but if this is too prolonged or too intense, especially in persons with inherited or acquired weakness of the nervous system, there seems to be some evidence that organic changes or insane conditions may be so caused. The functional conditions found as the result of the poisoning from intestinal stasis, as in the same conditions due to other causes, do not as a rule present the clear types found in our text-books, but as a rule more or less mixed types.

Neurasthenia, or nervous prostration, is probably the most common and best known of the functional conditions so produced; and I use the term in its commonly accepted sense and not in that of the school of Freud, who attributed all human joys and all human ills to that function which is presided over by the God Priapus. As a rule this condition develops slowly in cases which give a history of intestinal stasis of many years duration; and though in the main they present the usual clinical picture of nervous prostration, yet the symtoms of irritability, depression, and hypochondria are usually more marked and constant than in the cases due to other causes. This condition was often described by the older writers as lithemia or lithemic neurasthenia.

Hysteria either alone, or more often associated with neurasthenia, is also frequently found in cases of intestinal stasis; and as in other toxic conditions may be either due to the direct action of the poison on the psychic centers in the frontal lobes, or the same effect may be produced by the anxiety arising from the constipation. It will be seen that the writer believes contrary to the teachings of Freud: that emotions can arise in the mind with sufficient power to cause this neurosis from other psychic trauma than sexual ones.

Headache in its various forms is, as is well known, a common result of intestinal stasis. It may be due directly to the toxemia, in which case it is usually preceeded by depression, drowsiness, irritability, and accompanied by disturbances of vision as spots before the eyes, colored scotoma, fortification spectra, or loss of vision. Such headaches are usually diffuse and accompanied by nausea, the whole forming the well-known sick or bilious headache: and there does seem to be some ground for the belief that they are due to the presence of the constituents of the bile in the system. Neuralgic headaches in which the pain is darting in character and follows the course of one or more cranial nerves, are as a rule described as reflex, but the method of their production is not explained; but we do know that pain can occur in certain branches of the fifth nerve at once after taking very cold substances into the stomach. That they may also be of toxic origin is shown by the neuralgic conditions following over indulgence in tobacco.

Neuralgic pains in certain spinal nerves are also often the result of intestinal stasis and are usually considered as reflex, and this is especially true of those occurring in the lumbar plexus; but from the fact that a very slight traumatism is sufficient to light up a neuritis in the affected nerves, it seems to the writer that this is some evidence that the vitality of these neurons had been lowered by the action of some toxic substance acting directly upon them.

Vertigo existing alone, either subjective or objective, continuous or paroxysmal, is another frequent result of intestinal stasis; and when occurring in this manner has often lead to mistakes in diagnosis. Visual disturbances of the character described as associated with headache may also occur alone, and being exactly like those found in epileptic conditions, should render the case one for the most careful study.

Epilepsy, or rather the epileptic condition, is one of the graver results of poisoning from intestinal stasis. To produce such a condition we must have first an inherited or acquired weakening of the cerebral cortical control, and second the accumulation of some poison within the body which acts as the exciting cause; and as we know there are many such poisons both auto- and heterogenetic.

Migrain is a condition so like the epileptic condition that it not infrequently preceeds, follows, or is associated with the manifestations of that condition, so that it might be classed as another manifestation of the same disease; and should be included with what has been said concerning epilepsy.

During the first half of the nineteenth century psychiatrists devoted much of their efforts to the study of the relation of the disturbances of the bodily functions to insanity; but during recent decades they seem to have accomplished but little beyond the evolvement of new systems of classification, until we come again to the school of Freud, who holds that classification is unnecessary as all forms but paresis arise from the one cause already mentioned.

Regis held that many forms of insanity were due to the retention of poisons normally formed in the body, and particulary those formed in the digestive canal, and he, with others, studied the well-known relation between the mental condition and the digestive function. These studies are not disputed today by writers and therefore can be accepted as facts.

In nearly every case of intestinal stasis we find a hypochondriacal condition, especially if this happens to be associated with a duodenal catarrh; or the sufferer is irritable, restless, dissatisfied, and quarrelsome; or in other cases the patient becomes depressed, refuses food, and in the severer forms of poisoning develops hallucinations of taste, delusions and, it is claimed, insanity.

Whether the poisonous bodies formed in the intestine can, like some other known poisons, produce true states of insanity in a normal brain is not improbable, but as yet not proven; but such power would, of course, be more marked in persons predisposed to insanity from inherited or acquired weakness, and in this way it is claimed that the various conditions which were formally classed together as melancholia were produced. Regis held that this causative relation was more common than is commonly believed. Esquirol also called attention to the frequency with which a displacement of the transverse colon occurred in the condition of melancholia.

Maniacal conditions may also arise from the same conditions, but with far less frequency, and are, like melancholia, but an exaggeration of the mental conditions already mentioned as occurring in most of the cases.

One organic condition of the nervous system is recognized as the result of the action of the toxic bodies retained in the body as the result of intestinal stasis, and if one such degenerative condition can be so caused, it is quite possible that others whose toxic origin is recognized, but whose poison is unknown may be also so caused.

As would be expected from the similar action of other and better known poisons such organic changes are much less common than functional ones, and it is also possible that many cases of this kind occur in which the true etiology is not recognized and the disease is assigned to some other cause.

Multiple neuritis seems to be the only organic disease in which the etiological relationship of these toxins seem to be established and differs in no way from the other types due to toxic agents. Cerebral hemorrhage, though it is not directly due to the toxins of intestinal stasis, may be indirectly due to that condition, as a result of the violent efforts made by the patient to unload the bowel. Whether the arterosclerosis to which the hemorrhage primarily is due, is in some of these cases caused by the intestinal toxins is as yet an unsolved problem.

The prognosis in these various conditions of the nervous system produced by intestinal stasis varies with the condition produced. In a hysteria due to the anxiety occasioned by the disease, a belief that the disease had been removed would cure the hysteria whether the intestinal stasis had been relieved or not; but if the hysteria was in whole or part due to the toxemia, then such suggestion would have but a temporary effect.

In simple headaches and neuralgias, the removal of the stasis is as a rule followed by recovery.

In neurasthenic, and especially epileptic conditions and migrain, the condition once having been established, shows but little tendency to recovery even after the removal of the cause, and these conditions require a long and careful after treatment, and even then some improvement is all that can be attained.

The melancholic and maniacal conditions so caused are as a rule followed by some mental deterioration, and a recurrence may be occasioned by causes too slight to produce the original attack.

Multiple neuritis as a rule recovers partially or completely after the cause has been removed.

# A CONTRIBUTION TO THE CLINICAL STUDY OF HYPERTENSIVE NEPHRITIS.

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## The First Paper—Introductory.

TRUE constructive work in the science of medicine ultimately aids the sufferer through the family physician. Lines of treatment should, therefore, be frequently modified and harmonized with new conceptions. Final precision is thus attained by successive approximations. If opinions concerning treatment are diverse, empiricism is ascendent and more construcive work is necessary. If evolution of treatment is not definite, research work both in the laboratory and at the bedside has failed of its object.

During the past decade, research designed to throw light on hypertensive nephritis has been enormous. It has been so great and in many instances so contradictory, that even if it should be desirable, it would be quite impossible for a clinician to corrolate all and apply it in practice. It seems that nearly every phase of this big subject has been submitted to examination by all the niceties at our command. Yet, if the influence of this work on treatment at the hands of the general practitioner is a correct criterion, the conclusion is inevitable that little has been truly constructive. In the last analysis, that portion which reaches the patient through the clinician is the part that counts.

That our conception of hypertensive nephritis has been modified and clarified in may ways cannot be denied and as family physicians we have been presented with some extremely valuable aids. Cabot has said that if all instruments of examination were denied to him excepting one which he might choose, he would retain his sphygmomanometer. By its consistent use, we have a better grip on the circulatory changes of nephritis than ever before. By the phenolphthelein test, we are able to determine the functional capacity of the diseased organs with fair approximation. Latterly, Otto Folin has given us a method for the determination of the non-protein nitrogen of the blood. The limitation of its use will soon be outlined, and it will undoubtedly lead to still greater precision.

I take it that in these three methods of examination (1) estimation of the blood pressure by the sphygmomanometer, (2) the phenolphthelein test and (3) the determination of the non-protein nitrogen of the blood, pronounced advances have been made in the past decade. None of these, however, can be considered *constructive* in the sense that I have used the term. As methods of examination, to study the condition of the patient at the time, and to watch the progress of the disease or determine the results of treatment, they are inestimable. But their value lies in the fields of diagnosis and prognosis. Only in an indirect way, and along lines which are hardly yet appreciated will they become of value in disclosing etiology, the clear understanding of which is so essential to rational therpeutics.

It appears trite to review such fundamental principles as those which follow, yet as clinicians and to a less extent as laboratory men, we are under a grave suspicion when a diagnosis of hypertensive nephritis is established of allowing the matter to rest at that point. We work hard by methods more or less laborious to uncover evidence which justifies such a diagnosis, and then the mind ceases to act. The prognosis rests on experience of previous cases and we learn to expect progression until the end arrives. Sometimes for unknown reasons, our prognosis is faulty and the disappointment is not always an unpleasant one for the patient. This last circumstance happens with sufficient frequency so that like Hashimura Togo, I arise to inquire, is the procedure outlined above the best we can do? Is it the ideal of practice? It is a hopeless task to expect full restoration of kidney function after prolonged strain and irritation, but it certainly is not a hopeless task to arrest the process and lead the patient to so treat his kidney that they will serve his purpose for an indefinite period. That this is possible is shown by the not rare instances where this event unexpectedly occurs, where blood pressure slowly falls, and albumen disappears from the urine.

From the standpoint of the pathologist, I am quite aware of the criticism which will be hurled at such a series of statements. Some will not be satisfied with any clinical evidence. But it is quite impossible to take out kidneys and examine them with the miscroscope only to re-examine them at a later date after the disease has shown further clinical progress. As clinicians we must speak in terms of the evidences of disease, which is less precise, and from a different base. But it should not be forgotten that the laboratory in the last analysis exists for the clinician, and that the evidence which the latter presents is after all the final standard of judgment.

It is entirely permissable for us to assume that disease cannot arise without adequate cause, and that this is especially true of nephritis. Finite mind can conceive of no other hypothesis. Carrel has shown, that with proper pabulum and with prompt removal of waste, living cells are potentially immortal. This not only applies to the cells of the embryonic chick, but to the living agglomeration of cells composing the human kidney. As a final incontestable and logical conclusion it may also be added that ultimate causes of the nephritides will be found in factors and influences which are extra-corporal.* It is also equally important to bear in mind that the irritation removed, the tendency is toward resolution. This is only another way of saying what has always been theoretically recognized that the tendency of disease is toward recovery. The difficulty lies in putting such a theory into practice when etiology is unknown. Such a statement also has some limitations. We conceive of the living cellular protoplasm as a mass of matter in such physical and chemical relationship within itself that in various respects an equilibrium is maintained. Among such are processes of oxidation and reduction, hydration and dehydration and in the alkali-acid content. If through overwork, or by the presentation of abnormal substances to the cell, these nice balances are disturbed, there is an irritation. If the process is sufficiently intense or covers a sufficient period of time, the irritation may proceed to a point where the equilibrium is permanently unbalanced and destruction supervenes.

Short of actual destruction, removal of the irritative cause will be followed by resolution with "inherent vitality" or "factor of safety" reduced in proportion. There is apparently only one situation in which an exception should be made and that is in the behavior of scar tissue. Nor am I sure that this should be classed as an exception. From a clinical standpoint, overgrowth of scar tissue means low parenchymatous irritation for a long period or direct selective action of some specific toxic substance. Some have regarded the tendency to contract as an inherent quality, but it is possible that this tendency is simply a reaction to or manifestation of continuous irritative stimulation.

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* By this is meant that the ultimate causes of disease will undoubtedly be disclosed in dietary and other habits of life to which the organism cannot readily adapt itself, and in infections.

Application of these general principles to the subject in hand, brings us to a new attitude toward hypertensive nephritis. That which we have regarded as a disease *sui generis,* is in reality a symptom and should be regarded as such. The diagnosis having been established, it is certain that the causes producing the condition must have been operating at the time and the disease progressing or the symptoms would not have arisen into that consciousness which terminated in the call for help.

This principle is elementary so far as the acute nephritides are concerned. For instance in the course of scarlet fever, albuminuria and edema appear. The relationship of cause and effect is not questioned, because the association is sufficiently constant to warrant the conclusion. The hypothetical bacterium or cause of infection has never been discovered. The hypothetical bacterial toxine has never been isolated nor its nitrogen content determined. Nor has the specific action of this hypothetical toxine on the circulation and the kidney epithelium been watched in experimental animals. In this situation, it is impossible to point to any chemical substance which is the direct cause of the kidney irritation. In other words, denial of the relationship of scarlet fever to nephritis is not accepted nor even attempted on the ground that the chemical formula of a nephrolysic toxine is not known. Krylberg, in 1876, called attention to the frequency with which certain types of acute intestinal disturbances were followed by manifestations of kidney irritation in children. It has only been within the past decade that this association has generally been looked upon as one of cause and effect. There is no reason to assume that the principles which have been given above do not apply in the more chronic forms of nephritis and that only by control of the causes will the disease itself be arrested.*

The practitioner, who has attempted to follow the literature of hypertensive nephritis finds his conception much confused. Apparently this has arisen from lack of precision in the use of terms, and this in turn has apparently followed from over-analysis. To illustrate: it is a simply hopeless task to attempt a classification of the nephritides based on histologic and anatomic appearance at death, or to attempt to square clinical symptoms with certain constant changes. To be convinced of this, one has only to realize that nearly every pathologist who has done any work along this line has attempted a histological classification of this type, and none of these classifications agree except in the most general way. This lack of agreement indicates clearly that the basis is a wrong one. From another point of view, it is not to be expected that such a classification would stand the test. If consideration is given to the etiology and one realizes the sensitiveness of the kidney to various irritations and overwork, it would be rather surprising if pure contracting kidneys, or pure parenchymatous types were found. The element of time is largely concerned with a certain class of irritants in the growth of the connective tissue. On the other hand, connective tissue overgrowth may be the result of an acute process as in diphtheria.

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* One is reminded of an old argument concerning the non-specificity of tuberculosis on the ground that the disease was chronic, and that all infections known at the time produced acute conditions. This argument was presented in all seriousness just prior to Koch's discovery. The element of time is one which has received scant attention at the hands of workers in the field of experimental medicine. For instance, much has been done to imitate in animals kidney lesions which have been found in human subjects. The methods employed are usually the injection of toxic substances, such as uranium nitrate. The experimental periods are usually confined to days, where the conditions they have attempted to imitate arose only through years of exposure to irritation.

Every substance capable of initiating irritation appears to affect first some particular point in the renal system which must bear the brunt of the excretion of that substance. If the dosage is large, the inflammatory change will spread to contiguous segments. If the time of exposure is long, the tendency is toward the formation of scar tissue.

The character of the toxine and the time during which it is allowed to act will determine the histological appearance of the diseased organ. The adult kidney has stood the rack of wear (physiological overwork) and of the tear of numerous adverse influences. Many people habitually abuse themselves in the use of meat and coffee. There are but few occupational toxicoses which do not reflect themselves in renal change. Permanent or transitory metabolic disturbances have their effect and finally, by no means of the least importance, few adults are not the subject of some infections, acute or chronic, the bacterial products of which are exquisitely focal. Is it any wonder that a kidney subjected for years to influences of such character presents an appearance which defies classification? Nor is this phase of the subject especially interesting to the clinician. It is purely academic to discuss various histological types of kidney lesions while the patient is still alive, assuming that we can attain any certainty in diagnosis.

From a clinical standpoint we have learned to associate in the broadest sort of a way, and with the greatest latitude certain types of kidney lesions with certain findings in the urine. The terms "parenchymatous," "diffuse" and "interstitial" will be retained for our purposes more to express the clinical syndrome than to express an exact histological condition of the kidney.

For greater precision in the use of terms, it will be necessary to advance the definition of a term introduced some years ago into medicine by Meltzer, in a Harvey Society lecture. I refer to the term "factor-of-safety." Borrowed from the field of mechanics, and applied to the kidney it expresses the maximum capacity of the organ for physiological work in terms of usual demand. With this expression, I desire to use the term "over-load," likewise borrowed from the field of mechanics. The kidney factor of safety, as determined by successive surgical removal of secreting segments is four, and by that is meant that it is capable of doing four times the amount of normal work which it is ordinarily called upon to do. The period over which this may occur without evidences of irritation is not indefinite. It is this factor of safety, the capacity for carrying overload, which enables the human organism successfully to combat various infections which have marked destructive power to the renal epithelium.* During the continuity of such disorders, the physico-chemical equilibrium of the cell is greatly disturbed, but we may safely say that this balance is again attained as soon as the toxic substances are eliminated and the supply ceases. After such wear and tear, "normal" does not indicate the same as it did prior to the onset. The overload has been great and the factor of safety is permanently reduced. The capacity for normal work is permanently damaged. In all likelihood there is histological change, the nature of which is determined by the selective action of the toxine and the time over which it acts. Such a patient, however, cannot be said to be suffering from Bright's disease until symptoms arise to consciousness which result from kidney incapacity.* Confirmation of this will be found in the Guys Hospital reports some years since, in which the statement is made that over 90 per cent of all who come to the autopsy table after the fiftieth year show microscopic evidence of kidney change regardless of the manner of death. This observation has been abundantly confirmed at many medical centers.

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* The preponderance of evidence at present indicates that the substances which are responsible for uremia are not normal end-products of metabolism retained through lack of renal function, but are abnormal products such as toxines of infections, substances resulting from submetabolism, etc. We should therefore keep in mind the distinction between these adventitious substances which are irritating to the kidney and normal end-products which within limits, are probably never irritating. Irritation from uncomplicated over

In specific instances, it is often quite possible, and should always be the effort, to determine whether the kidney condition has been "honestly acquired." To illustrate:

Protocol 1.—E. A., aged forty-nine years. Healthy parentage. Bottle-fed infant. Gastro-enteritis at eighteen months. Scarlet fever at four years. In the first decade of life was not restricted as to habits of eating. Acute appendicitis (with drained wound) at sixteen years. Present symptoms referable to a septic gall-bladder, sufficiently active to cause slight fever and much pain. The urine contains 5 per cent albumen by bulk and casts in abundance. The systolic arterial pressure (auscultatory) is 165. The patient was operated, the gall-bladder removed and in a few weeks the pressure returned to normal. The albumen disappeared. He has now little or no evidence of renal disease, but it is assumable that histological evidence of the strain would be disclosed if such an examination were possible.

It is not difficult to analyze the train of events in this case. Every statement in the historical record is pregnant with possibilities so far as the kidneys are concerned. It is quite conceivable that the septic gall-bladder of long standing would not have sufficiently disturbed the function of the kidney to cause hypertension and albuminuria if the gastro-enteritis and the scarlet fever had not preceeded its advent, and caused a reduction in the renal factor of safety.

This rather wearisome explanation has been necessary for the logical presentation of the subject and as preliminary to the main hypothesis of the series, namely that in a given case of hypertensive nephritis, causing symptoms from which the patient suffers and for which he seeks aid from the physician, the determining cause of the renal condition must be operating at the time or the symptoms would not have arisen into consciousness. It is not difficult to accept this,

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work, caused by ingestion of nitrogenous food, while theoretically possible, is never encountered because: (1) metabolic and digestive disturbances will first arise leading to abnormal end-products, and (2) the amount of meat which must be eaten to produce such a result would be prohibitive.

* The determining factor in the production of symptoms is not so much kidney incapacity as is supply of toxine. No matter how damaged a kidney, removal of the source of adventitious substances, spoken of above, such as products of submetabolism, bacterial toxines, etc., will leave a kidney with reduced factor of safety and no overload. This combination yields desirable results in the prolongation of life, especially if, by the reduction of N-intake, the normal renal load is reduced to the lowest basial line.

providing we keep in mind that renal disease must have a cause, and that the tendency of disturbed cell life is toward recovery if the cause of the disturbance ceases. There is possibly an exception to be noted in as much as metabolic disturbances may be initiated late in the disease leading to a vicious cycle, but there is no direct evidence of this at present.

With these definitions, and explanations, it will be necessary to add, largely in self-defense, that it is not the aim to present the last word on this subject or to bring into careful alignment the present good literature available. The opinions given are founded on clinical experience and observation, are personal and will be illumined from time to time by reference to experimental medicine. It will be essentially clinical. It is not claimed that contradictory evidence cannot be found. In a field so vast and complex any hypothesis presented will be found vulnerable in many points. Personal experiences of the individual will always modify conceptions, and it is right that it should be so or progress would be impossible. The plan is to present the subject from a clinical stand-point in such a manner that we may look forward to arresting the process (at least in some cases), which under usual circumstances would progress, and to so regulate the diet and habits of the patient that he will be able to live indefinitely, in efficiency and comfort by reducing the kidney load well within the diminished factor of safety. I am sure that this point of view is the proper one, in the light of the present knowledge, and that the results will justify the attempt. To present the subject in a form which shall be useful, it is proposed to change slightly our present conception of the interpretation of albuminuria and cylindruria, which will be the subject of the next paper in the series. The etiology of arterial hypertension and cardiac hypertrophy and their relation to the diseased kidney; septic processes, acute and chronic, as causes; the relation of colonic sapremias to hypertensive nephritis; and a consideration of the treatment based on etiology and of diet based on kidney capacity. Finally I hope to add a chapter on experimental nephritis and indicate some lines of experimental work which, carried out, offer hope of developing truly constructive clinical procedures.

As a preliminary to this, I have asked for the acceptance of the following assumptions:

(1) The nephiritides have definite and discoverable causes, and the various clinical manifestations are but the manifestations of different causes.

(2) Hypertensive nephritis is therefore but a symptom of some process operating at the time subjective symptoms arise into consciousness. It is not a disease *sui generis,* and we should begin definitely to define the source from which it arises, using the word "idiopathic" for cases wherein causes are not discoverable. This classification for clinical purposes is of course far superior to any based on histologic appearance of the kidney which cannot be diagnosticated with any certainty by clinical methods.

(3) The expressions "factor of safety" and "overload" will be used in the senses defined.

(4) The medical history of a patient suffering from chronic hypertensive nephritis nearly always reveals adequate cause for the decrease in the "factor of safety;" the determining cause assumably operating at the time the patient seeks relief.

(5) The discovery and removal of the determining cause is therefore the problem for the clinician and it is hoped that by such

procedures, followed by suitable dieting and hygienic directions, the patient may be placed in such a condition that his life term will be considerably prolonged and with increasing efficiency, providing, of course, the disease has not progressed to a point where serious metabolic disturbances have supervened.

# THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE GENITO-URINARY TRACT.*

**Nathaniel P. Rathbun, M.D.,**
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TUBERCULOSIS may occur, and has been demonstrated, in practically every portion of the genito-urinary tract, the order of frequency in which the various parts are involved being somewhat as follows: kidney, epididymis, vesicles, prostate, bladder, urethra and prepuce. However, isolated tubercular foci in the prepuce or urethra are so rare as to be considered surgical curiosities. Tuberculosis of the testicle is always secondary to a lesion in the epididymis. Tuberculosis of the prostate and seminal vesicles is usually, I believe, secondary to an involvement of the epididymis, infection taking place by way of the vas deferens, or occurs as a part of the terminal stage of a generalized uro-genital tuberculosis, infection taking place through the lymphatics or by contiguity from the bladder. Primary tuberculosis of the prostate and vesicles is said to occur. Doubtless it does, but it must be very rare indeed and extension to the epididymis must occur very early in the course of the disease. I have never seen, or at least, I have never diagnosed a case of tuberculosis confined to the prostate and vesicles alone. Tuberculosis of the bladder, I believe, is always secondary and in the great majority of cases to a lesion in the kidney, less frequently and again as a part of the terminal stage of the general infection by direct extension from the prostate and vesicles, so that I shall devote most of the time allotted to me to a brief consideration of some of the practical points connected with the diagnosis and treatment of tuberculosis of the kidney and epididymis and consider lesions in the rest of the genital tract as complications of one or both of these.

Tuberculosis of the epididymis occurs most frequently between the ages of 20 and 40. Its onset is usually gradual, the first symptom noted being one or more nodules in the epididymis, usually at the head, hard and painless at first, later becoming soft, with a tendency to break down and adhere to the overlying skin, to suppurate and form sinuses. There may or may not be a history of trauma or a preceding gonorrheal epididymitis which has been slow in resolving. These patients look tubercular and careful examination will disclose more often than not a primary focus of infection still active in the lung. In most cases coming under my care I have been able to demonstrate characteristic nodules along the cord and in the wall of the seminal vesicles. Later on these same nodules are found in the prostate. The urine is clear and there are no symptoms referable to the act of urination until the bladder becomes involved by a direct extension from the prostate and vesicles. Given a young man with an active pulmonary tuberculosis in whom, for no apparent reason, a painless lump develops in the epididymis, our suspicions should be aroused. If other lumps appear and one or more of these show a tendency to break down and suppurate, our suspicions are practically confirmed. The demonstration of tubercle bacilli in the pus, of course, makes the diagnosis absolute. However, when an otherwise apparently healthy young man presents himself with a swelling in the scrotum, the diagnosis is not always so easy. Here we must differentiate between syphilis, chronic gonorrheal epididymitis, malignant tumor and tuberculosis (I take it for granted that no person would confound simple hydrocele or scrotal hernia with the subject under consideration).

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In syphilis we will usually get a history of a primary infection. The testicle itself is most frequently involved and careful palpation will differentiate it from the epididymis, which may be free from disease. The tumor is very dense and hard and there is the characteristic absence of the normal testicular sensation on pressure.

In late tubercular cases the testicle may also be involved. The mass, however, is apt to be softer and there may be deep fluctuation and characteristic nodules are felt, not only in the epididymis, but in the cord and vesicle wall. In a minority of cases there may be a secondary hydrocele. If so, the fluid should be removed with a trocar and the characteristic changes may be more readily palpated. Under these circumstances we should avail ourselves of the opportunity to examine the fluid for tubercle bacilli and send a specimen to the pathologist for animal inoculation.

Tubercular cases look sick, while the syphilitics often appear to be in rugged health.

If still in doubt, the Wassermann reaction may help to clear up the situation.

In chronic gonorrheal epididymitis there is the history of a sudden onset during the course of an acute gonorrhea, although here we must bear in mind that the two diseases frequently co-exist and that one may be engrafted upon the other. There are practically always other signs fairly easy to demonstrate. A purulent drop may be squeezed from the meatus in which is found the specific organism. The urine is characteristic. Rectal palpation will often show involvement of the prostate and vesicles, but the more or less regular enlargement of one or both prostatic lobes and the smooth infiltration extending from the upper border of the prostate upward and around the vesicles, is quite different from the nodular feel of tubercular cases.

Massage of these organs, when first performed, for the purpose of securing the expressed fluid for microscopical examination, causes much greater pain in gonorrheal than in tubercular cases. The fluid expressed may show gonococci in the one instance and tubercle bacilli in the other. Their absence in either case is not conclusive evidence. On the whole, it should not be difficult to distinguish typical cases. It is, however, often very difficult to diagnose a tubercular process engrafted upon a chronic gonorrheal epididymitis and may require careful study extended over a considerable period of time. The presence of tubercular lesions in other parts of the body and a tendency to suppurate are, of course, important factors in the diagnosis.

Malignant tumors, like syphilis, are apt to involve the testicle proper. They grow more rapidly and are more uniform and less apt to be nodular and they show less tendency to suppurate and they are apt to be tender. Rectal examination is usually negative.

In these cases I believe the tuberculin test to be of considerable value. If the diagnosis has narrowed down to one of these two conditions, a negative reaction points rather strongly to malignancy. A positive reaction, as is well known, is not so conclusive.

If unable to make a diagnosis in this group of cases by any other means, I believe we are perfectly warranted in making an exploratory operation and, if necessary, submitting a specimen to the pathologist for frozen section, although the appearance of the tubercular nodule is usually clearly evident to the naked eye. I believe an exploratory operation to be warranted since it is of such paramount importance to make an early diagnosis in malignant tumors.

## Treatment.

As I have intimated above, I believe that a large majority of these cases is secondary to other foci and that most of them, when first presenting themselves for treatment, have involvement of at least one seminal vesicle.

I am disposed to take a conservative attitude in the consideration of their treatment. Naturally, if we are so fortunate as to see a case of primary tuberculosis confined to the epididymis prompt epididymectomy is clearly indicated. More often than not, however, the treatment consists of the accepted medical treatment of tuberculosis—fresh air, food, tonics, cod liver oil, creosote, etc., plus surgical indications as they arise. Broken-down nodules should be incised, gently cleaned out with the finger, the cavity swabbed with pure carbolic and alcohol and filled with iodoform emulsion. The epididymis may be removed entirely when this is done. If this operation is performed, I believe that the vas should be anchored in the wound where it may be injected from time to time with a few drops of pure carbolic acid. Rarely is it necessary to sacrifice the entire testicle. How much is done and the manner in which it is done must depend upon the surgical judgment of the operator at the time of operation. Extremely radical operations, such as the removal of the testicle, cord and vesicle, are mentioned only to be condemned. I doubt if they ever effect a cure and they often do harm by lowering the vitality of the patient through the long-continued suppuration which almost invariably follows.

A word here about tuberculin. I believe it to be a very valuable adjunct to our other treatment and that it should be used more extensively. I have under my care at the present time a young man who two years ago had one epididymis removed for tuberculosis. The disease recurred six months ago on the other side. Under tuberculin therapy, with practically no other treatment, he has gained weight and strength and the local conditions are improving slowly by surely.

## The Kidney.

In considerably more than half of all cases of uro-genital tuberculosis the primary lesion occurs in the kidney *and in one kidney,* and it may remain without extension for a period ranging from a few weeks to as many years. This is an extremely important fact to bear in mind since it emphasizes the importance of early diagnosis and furnishes a pretty clear indication for treatment.

I propose to omit any consideration of the cases of acute miliary tuberculosis. They are practically always a part of a general infection or of the terminal stages of pulmonary tuberculosis. They are medical cases and the general medical man is welcome to them.

Primary tuberculosis of the kidney usually has a very insidious onset. Sometimes the early symptoms are so slight as to entirely escape observation until an examination of the urine shows a pyuria. In the last month I had a case referred to me of a young man of 20 who had no reason to believe that he was in anything but perfect physical condition until he was rejected by a life insurance company a few weeks previous because of the presence of pus in the urine. A more thorough examination also showed the presence of tubercle bacilli. He was sent to me with a diagnosis of tuberculosis of the genito-urinary tract. It was an easy matter to locate the trouble in the left kidney, and a very careful examination failed to reveal any lesion in any other part of the body. The bladder, including the ureter mouth, was perfectly normal. This man had not a single symptom other than the urinary findings noted. Ordinarily, however, these cases present, even in the early stages, a train of symptoms which would suggest a possible diagnosis. One of the earliest signs I believe to be nocturnal polykyuria and polyuria. The urine is acid and of low specific gravity and may at first show no other abnormalities. This symptom alone occurring in a young adult in whom we can exclude other well known causes, should put us on guard and demand the most careful observation and rigid examination for the purpose of confirming or excluding the diagnosis of incipient renal tuberculosis. Repeated examinations of the urine will usually show few or many pus cells, frequently gathered in clumps and frequently a noteworthy absence of the ordinary pyogenic organism. In a fair proportion of cases repeated examinations of the urine will demonstrate the specific germ, which must, of course, be differentiated from the smegma bacillus, which it closely resembles.

Rovsing says that we can demonstrate the tubercle bacillus in practically all cases. I do not think that this is the experience of most observers.

At this time a specimen should be sent to the pathologist for animal inoculation.

Pain in the loin may or may not be present. It may be on the opposite side to the lesion. I do not consider it a symptom of much value in either a negative or positive way.

Hematuria may or may not occur. It is not specially diagnostic. Severe bladder pain and tenesmus with large quantities of pus and frequent attacks of terminal hematuria occur in the late cases. These are symptoms of bladder and not renal tuberculosis.

There is noted a fairly early loss of flesh and strength. Careful temperature record will more often than not show a slight evening rise in temperature, 99-100. There is usually, but not always, some tenderness on deep pressure over the affected kidney, and in the later stages a definite enlargement may be demonstrated.

The well kidney, however, may be large and tender, so that this symptom per se has very little diagnostic value.

In a case of suspected renal tuberculosis our investigation is principally along two channels:

*First.*—A careful examination of the mixed urine.

*Secondly.*—A complete and thorough cystoscopic examination, including an estimation of the kidney function on both sides by one or more of the many well known methods, and a careful examination of the separated urines.

The mixed urine examination will include a search for pus and the tubercle bacillus and animal inoculation. This, by the way, should be done early in the course of our investigation. The animal may die in a week or ten days from general miliary tuberculosis. If not, it is killed at the end of a month and a careful autopsy performed and a search made for tubercular lesions. While this test is not absolute in either a negative or positive way, it is nearly so and is certainly a valuable aid to diagnosis. By this means alone we may often make a diagnosis of urinary tuberculosis and it remains for the cystoscopic examination to definitely locate the trouble.

The bladder may appear perfectly normal. More frequently, however, there are characteristic changes at the ureter mouth on the affected side. This may be only a slight edema of the lips of the ureter meatus. There may be a more general bullous edema extending to and involving the corresponding part of the trigone. There may be small tubercle nodules or minute ulcers which are hard to describe, but once seen are readily recognized.

In the presence of such findings the diagnosis is at once confirmed.

In more advanced cases the changes in the bladder are more extensive, ulceration being noted in all parts, most marked however in the neighborhood of the trigone and ureter mouths.

The bladder may be so contracted and its capacity so diminished as to render cystoscopy extremely difficult or impossible. In these cases it is often impossible to catheterize the ureters, and here we may occasionally get much valuable information by injecting indigo carmin and watching the blue swirl, irrigating the bladder through the cystoscope from time to time while waiting. This will give us a line on the relative activity of the two kidneys.

Whenever feasible, both ureters should be catheterized and the specimens carefully examined as to their specific gravity, urea equivalent and the presence of pathological elements. After collecting our specimens, the catheters may be left in place and the kidney function estimated by one of the well known tests. Thalein is the most fashionable at present. One of the tuberculin tests should be made and will occasionally help to throw some light on the subject.

If we are sure of the functional capacity of the other kidney and the general condition of the patient is such as to permit of a major operation, prompt nephrectomy is clearly indicated. The kidney, including the perirenal fat, should be removed through a lumbar incision sufficiently large to permit of removing the ureter well down towards the bladder. The stump should be cauterized with pure carbolic and dropped in the wound and a small cigarette drain placed at the most dependant portion.

The after-treatment consists of tonics, prolonged rest and change of climate when practicable.

Bladder lesions, which are so often associated, many times undergo spontaneous cure following nephrectomy. If they do not, their treatment is that of tuberculosis generally, plus instillation of mercury chlorid, gomenol, iodoform emulsions, etc., together with urotropin and salol internally when a mixed infection coexists.

When there is a bilateral involvement, grave questions involving the best of surgical judgment arise.

It is sometimes possible to so improve the patient's general condition by means of tonics, fresh air, etc., together with (and I again wish to emphasize this point) the careful use of tuberculin, as to permit of nephrectomy upon the most involved kidney, hoping that a continuation of the aforementioned general treatment may effect a cure.

The treatment of the terminal stages of urinary tuberculosis is palliative only, sedatives, local and systemic, with occasionally permanent bladder drainage for the relief of pain.

In conclusion there are two facts more than any other that I wish to emphasize:

*First.*—The importance of keeping our "ear to the ground" for cases of early renal tuberculosis. Young adults who come to us complaining of frequency of urination and polyuria, worse at night, should be looked upon with the gravest suspicion. I am sure that many cases of incipient renal tuberculosis are treated for months with a diagnosis of diabetes insipidus, chronic interstitial nephritis, neurasthenia, or some other equally incorrect diagnosis while valuable time is being lost.

*Secondly.*—The presence of pus in the urine is a serious matter and it is of vital importance to determine its source, which can always be done, and its cause, which can be done in a great majority of cases.

I know of no more satisfactory major surgical case than one of renal tuberculosis diagnosed early and cured by prompt nephrectomy, and, on the other hand, I know of no more distressing condition than the pain and tenesmus which mark the terminal stage of genito-urinary tuberculosis.

## TUBERCULOSIS OF THE CERVICAL LYMPH NODES.*

**Thomas Bray Spence, M.D.,**

Brooklyn-New York.

THE tuberculous lesion most commonly encountered by the general surgeon is that of the lymph nodes and especially those of the cervical region. These lymphatics drain the scalp, the face, the mouth, the nose and the pharynx, and empty into the veins on the right side of the neck and into the thoracic chyle duct on the left side. This last point in their anatomy is important to the surgeon, for inasmuch as there is no direct connection between the lymphatics of the cervical region and those of the mediastinum an infection of the cervical nodes remains for a long time a purely local affair, and a successful attack upon such a local infection will therefore not be followed by further spread of the disease along the lymphatics of other portions of the body.

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* Read before the Kings County Medical Society, June 16, 1914.

The exact source of infection of tuberculous adenitis cannot by any means always be determined in each particular case, but it is probable that the tonsils, the nasopharynx and the teeth can most frequently be held accountable.

The question of diagnosis of this condition is usually not a difficult one to settle. Andrews, in Keen's Surgery, says: "Chronic hyperplastic enlargement of the cervical lymph nodes is almost always tuberculous." This statement is perhaps a little too broad, for the disease, in its early stages at least, is not always easily differentiated from non-tuberculous hyperplasia.

The natural course of the disease is slow and sometimes tends toward resolution and disappearance of the nodules, but caseation is the rule, followed by the formation of abscesses and sinuses. The treatment to be applied to these cases has in view the avoidance of these unpleasant and dangerous later developments, as well as the metastatic involvement of the lungs, bones, joints and various other tissues of the body.

It is important in the beginning to destroy all possible sources of infection if an improvement is to be expected in the condition of the infected nodes. Diseased tonsils should be removed, adenoids should be eradicated, the nose should be examined, nor should that fruitful source of infection, carious teeth, be overlooked. Tonics, proper feeding, outdoor living and general hygiene are the valuable means of treatment at hand and should all be employed. Many cases of hyperplasia of the lymph nodes will recover under this regime, but what proportion of them are tuberculous cannot be determined. It is definitely known, however, that in some instances the nodes of cured cases have contained the bacilli. It is unfortunate that many of the patients suffering from this disease do not receive the simple treatment outlined above, especially since most of them are children and therefore entirely dependent on others for guidance and care. Many of them might be cured by a proper mode of life, many more of them might have escaped the primary infection and have been spared from the dangers of the destructive germ of tuberculosis.

Failure is often the result of such treatment whether or not the directions are carefully observed and an appeal must then be made to surgery. That the appeal will seldom be in vain is the testimony of many hundreds of operated cases. The mortality from the operation has been surprisingly small, various operators having reported large series of cases without any deaths. In certain extensive cases with involvement of both sides of the neck it is sometimes advisable to do the operation in two stages with an interval of time for recuperation. Operation consists of complete extirpation of the nodes or of incision, curetting and drainage of caseous masses or abscesses. As might be expected thorough removal has given the better results, but the method to be chosen must be adapted to each particular case.

One of the most common objections raised against operation is the resulting scars. Dowd has shown that the necessary incisions can be so favorably placed that scars are left so faint as to be almost unnoticed, especially if the operation be done at a favorable time before extensive breaking down of the nodes.

The technique of removal of the cervical lymph nodes is not difficult to follow providing the operation is undertaken early enough in the disease, before there is much caseation of the nodes and before the formation of much inflammatory tissue. Thoroughness of removal of all the infected nodes is most important if recurrence is to be prevented. The avoidance of disfiguring scars is easily accomplished in the early cases, and in many of the late cases there will be little to complain of. In some of the advanced cases one is justified in disregarding unsightly scars in the endeavor to save the patients from a dangerous disease. At the worst the scars of operation are not nearly so bad as in the instances where abscesses are allowed to break through the skin and form long-standing sinuses. While drainage is often necessary only a small opening is needed and the drain can be removed early. The patient will not be kept in bed more than a day or two and can soon be dismissed from the hospital.

Before deciding on the relative merits of general treatment and operative treatment in these cases it is necessary, of course, to study a sufficient number of them for a proper comparison. It is fortunate that a number of careful observers have collected and tabulated their results. Demme, of Berne, reported the first twenty years' work in the Children's Hospital in which six hundred and ninety-two patients with lymph node tuberculosis were treated by constitutional measures only, and of this number 29.2 per cent later developed tuberculosis in other parts of the body, 21 per cent in the lungs. Even these figures do not include the bone infections, and in many instances the period of observation was short. Statistics from some of the large German clinics show that 25 per cent of the cases not treated surgically subsequently develop pulmonary tuberculosis, about 10 per cent tuberculous meningitis and a smaller per cent tuberculosis of the bones and joints. Van Noorden reports 28 per cent of later tuberculosis in one hundred and forty-nine patients. Blos in one hundred and sixty cases found 26 per cent of lung tuberculosis and 14 per cent tuberculosis in other organs.

On the other hand Karweski reports a series of one hundred and twenty-eight cases in children that were operated upon and kept under observation for a long time with only three deaths from tuberculosis, a percentage of only 2.5. Wolgemuth reports in a series of one hundred and twenty-seven cases, 24 per cent cured without operation, 63 per cent cured by incision and curetting and 70.5 per cent cured by extirpation. Judd reports six hundred and forty-nine patients from the Mayo clinic, all of them operated upon, in which less than 3 per cent died of pulmonary tuberculosis. Many other operators have made similar reports and are therefore strongly in favor of surgical treatment combined, of course, with the very best of general treatment. Among American surgeons Dowd has probably followed his cases most carefully and has furnished some valuable records. In a series of two hundred and seventy-five cases he has had but one death, the fatality being the result of secondary hemorrhage. He divides his cases into groups, depending on the length of time of observation after operation, and in 1908 he published the following list of apparent cures:

98 per cent in 54 cases followed 5 to 13 years.
88 " " " 42 " " 3 " 5 "
83.8 " " " 87 " " 1 " 3 "
85.8 " " " 92 " " less than a year.

He says: "We are well aware that there are some patients in the list of apparent cures who will develop recurrences, and that most of those who have recurrence will ultimately be cured. It is impossible to give a table of results with mathematical accuracy, since the patients cannot all be followed to the ends of their lives, but it is confidently believed that these tables give a fair indication of the value of the method. They surely substantiate the statements that the neck is a particularly favorable site for the surgical treatment of tuberculosis, and that this operation is one of the most satisfactory of surgical procedures."

Dowd's conclusions, founded upon the work of many other investigators as well as his own most painstaking studies, certainly seem to be sound.

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## TUBERCULAR JOINT LESIONS.*

**Walter Truslow, M.D.,**

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TUBERCULOSIS in bones and joints shows itself more frequently in childhood, but may first appear in young adult life; just as pulmonary tuberculosis has a predilection to young adult life, but may appear in childhood. Bone and joint tuberculosis tends to appear in but one joint and spreads to others only as a late manifestation: whereas, syphilitic joint lesions are more apt to be multiple. Joint tuberculosis gives the symptoms of pain on motion, swelling, limitation of motion and especially of wasting of the segment next distal to the joint involved. Redness and acute inflammation is very rare; on the contrary, the characteristic appearance of the skin over the joint is colorless and bleached out, giving the name of "white swelling," formerly much used. Treatment of joint tuberculosis is hygienic and mechanical and rarely operative.

Anatomically, tuberculosis may appear in the epiphyseal lines near the joint, in the articular portion of the bones, in the articular cartilages or in the synovial lining of a joint. It, however, has a special tendency to form in the epiphyseal lines near the joints. This is an important point as occasionally, with a good X-ray picture to sharply define its exclusion of the joint proper, a careful curetting from the side of the bone may abort more serious involvement.

Whereas joint tuberculosis is more common in children than in adults, manifestation in the latter is apt to be very severe. Modern orthopedic surgery tends increasingly toward early operative interference, in adults, before the joint proper is involved; conservative treatment is chosen when dealing with children.

In differential diagnosis, we have to consider syphilis, gonorrhoea, typhoid fever, pneumonia and many of the exanthemata as factors which present a clinical picture sometimes difficult to separate from tuberculosis. A history of a recent attack from one of the acute infectious diseases often points toward the joint involvement as a complication of that disease. The Wassermann reaction is fairly constant if the lesion is syphilitic. In gonorrhoea the onset is more sudden and the joint is usually more painful and with greater manifestation of local heat. In the writer's experience, the Von Pirquet reaction for tuberculosis is only fairly accurate, and diagnosis of the tubercular joint is often made only after exclusion of other possible conditions, from the history of comparatively slow onset and the known fact that tuberculosis tends to involve but one joint only.

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* Contributed to a Symposium on Tuberculosis, Kings County Medical Society, June 16, 1914.

As compared with pulmonary tuberculosis, prognosis in joint tuberculosis is good. But, we distinguish between prognosis of cessation of disease and prognosis of resulting deformity. Under proper treatment disease is entirely arrested in a very large percentage of cases seen early—that is, before constitutional involvement is great. Orthopedic surgeons today feel that resulting deformity can usually be prevented and are devising means, with increasing success, and are even overcoming deformity when it exists. The writer examines and makes careful note from time to time of all tubercular patients under his care, for the following findings: General condition, as shown by appearance, appetite, sleep, degree of pain and especially by body weight; and local, as shown by comparative girths of the swelling and the degree of angulation of deformity. He considers that if general condition is good, the weight increasing, the swelling diminishing and the deformity-angle improving, that the patient is doing well and the treatment is efficient. On the other hand, if the patient is losing weight, or if during the growing age the weight is stationary, and the individual is fretful and if the joint swelling is not diminishing or the muscle spasm which controls the angle of deformity is not improving, that the patient is not doing well and that the treatment is not efficient. It seems to the writer that we can increasingly control our care of these patients by definite knowledge of their condition.

As has been said, the treatment is constitutional or hygienic, mechanical and occasionally operative. Any treatment that does not consider the utmost care in the upbuilding of the patient is faulty. One orthopedic friend of the writer recently told him that he now refuses the private care of patients with spine or hip joint tuberculosis, if the latter will not agree to sleep out of doors or to get one of the special window-tents that are now so easily obtained. It is also well known that forced feeding to the limit of proper assimilation in all forms of tuberculosis is essential. Whatever form of mechanical appliance, whether by braces, by recumbency on the Bradford frame, by plaster of Paris dressings, or, as in the case of internal splinting by the Albee or the Hibbs operation in spinal disease, the object always sought is immobilization of the joint involved. I think it right, here to emphasize what is not always understood by physicians and is greatly misunderstood by the laity, that the purpose of immobilization is to check the reflex muscular spasm and thus to relieve that inter-bone pressure and irritation which it causes; and that this immobilization does not tend toward permanent ankylosis; but that on the contrary by hastening recovery of the diseased conditions, temporary fixation tends toward future mobility of the joint.

The way in which immobilization is accomplished varies with the joints involved. In early spinal disease, carefully applied extension on the Bradford frame is most valuable. Children can be easily moved out of doors, and the frame, by extending and overextending the spine, prevents and may overcome incipient deformity. When all spasm is overcome, the patient may assume the upright position if the spine is properly supported, and the choice is made between the plaster of Paris jacket and the well applied brace. Both require considerable experience for accurate application. A plaster of Paris jacket may have large windows cut in appropriate places and thus diminish weight and compression of the chest in the growing child; while daily use by the attendant of the so-called "scratcher" reduces skin irritation to a minimum. Its great advantage lies in the fact that an unskilled parent or friend may not alter the adjustment. However, if the patient is well on toward recovery and one feels that there may be intelligent home care, a light but efficient spinal brace is of great use. But it must be remembered that the instrument-maker is not competent to measure for these, or indeed for any other braces.

In the writer's opinion, the internal splinting of the spinous processes, in vertebral tuberculosis, is of value in that it shortens the time necessary for external splinting and thus conduces to better growth and development of the child; but the writer has not felt that external splinting by brace or plaster jacket may be discarded as early as Albee or Hibbs have suggested. The writer has made careful study of most of his post-operative cases and feels that the internal splinting is an important adjunct to our care of Potts' disease, that it greatly shortens the time necessary for external splinting, but does not replace the latter.

It would too greatly lengthen this general discussion to speak of the special care of hip disease, of knee joint and of other joint involvement. The same principles of hygienic care and of temporary immobilization of the joint are involved. The writer has already mentioned the possibility of limiting disease, near but not involving a joint, by curetting through an extra-articular approach. The only warrant for this is a reasonable belief that one can by this means remove the entire focus of disease. Such a curetting should be immediately followed by carbolic acid swabbing and alcohol washing and sometimes by the immediate addition of bone wax. The wound should be sewed up.

Abscess and tubercular sinus is a distressing complication of tubercular joint trouble and lowers the percentage of recovery, especially of recovery with good mobility of the joint, but by no means precludes recovery. The writer would sound a strong note of warning against the custom still persisted in by some surgeons of freely opening and leaving drainage tubes in these tubercular abscesses. A large swelling easy of access may with impunity and often wisely be aspirated, and the punctured hole sealed at once by sterile gauze and collodion. Lately, the writer aspirates and nearly empties such a cavity and then injects Murphy's 2 per cent formalin and glycerine solution. Very rarely such an abscess, if quite near the surface, may be cleanly incised, the purulent matter gently squeezed and even washed out with saline and the incision wound sewed up. If this is done the incision must be further protected by proper snug bandaging. One thus gets a primary union, but runs the risk of having started a depleting sinus.

Sinuses and long continued discharge therefrom are a great drain and interference with the "conservation of natural resources," which is so necessary for a good final outcome. The treatment of sinuses consists in simple change of external dressings and the prevention, if possible, of mixed infection. The use of Beck's bismuth paste is sometimes of great value.

To sum up: The care of tuberculosis of bones and joints is an inevitably long procedure; the disease tends toward deformity, which usually can be prevented and the outcome of cure—that is, cessation of disease—gives a high per cent under proper care; but owing to prevalent laxity in the detail of treatment, the percentage of deformity prevention is not as high, although today we recognize great improvement in this feature and it should be the aim of the profession.

## SCHOOL INSPECTION.

**Charles A. Steurer, M.D.,**

Port Washington, New York.

IT would be useless to attempt to cover the entire subject of medical inspection of schools in the time allotted me for this paper. I believe it will be admitted by us all that this work is still in an embryonic stage.

The object of such is:

1. To detect and correct physical deformities.
2. The exclusion of contagious diseases.
3. Segregation of mental defectives.
4. Improvement of hygienic conditions of our schools.

The New York State law requires a yearly health examination of all pupils before being admitted to school. The form, which is supplied by the State Board of Health, covers a complete physical examination, and if conscientously carried out will give a true index of the physical and mental status of all pupils; although parents are given the option of having the child examined by the family physician or school inspector. These are filed away alphabetically, and thoroughly gone over by the inspector. Notes are made of children who need vaccination or physical attention, and the parent is notified.

It is not necessary to visit our suburban schools as often as schools in cities or slums. We are somewhat handicapped in our schools because we do not have a nurse working with us. It is almost impossible to follow up a case out of school without their aid; first, because she is the connecting link between parent and child; second, because the visit of the medical inspector may be misconstrued as an effort to benefit his private practice.

The medical inspection reaches its highest degree of efficiency by the co-operation of school authorities, parents, and local physicians. The lack of co-operation shown by some of the medical profession to the inspectors has been a serious drawback to the attainment of efficient inspection. I have found in my work that most of the doctors co-operate. In order to properly carry out school work, one should possess patience and tact, a complete knowledge of children's diseases and defects, and a sufficient knowledge of special branches is necessary.

When we do not have nurses working with us it is a good plan to have teachers make note of children who apparently do not hear or see well, or are not able to keep up with their classes, and to report to the examiner on his rounds. Definite days and hours should be set, so that the physicians can conduct their work with as little interference as possible with the school curriculum. If teachers see that one is regular and takes interest in his work it imbues them with a like spirit.

When any child has suspicious throat the culture should be taken of both throat and nose. In many cases nasal cultures will disclose the diphtheria bacillus, while throat culture will be negative. Individual tongue depressors should be used, then destroyed. All suspicious cases of any contagious or infectious disease should be excluded at once, as well as children in the same family. In this work much can be accomplished by having the health inspector co-operate. Whenever such a case is reported to the health officer in Port Washington, he in turn reports to me, and I then find out what grade the child is in, who sits near him, and try to trace the origin of the case. This method allows little or no chance of a case escaping our observation.

A great number of the troubles among school children can be directly traced to poor nutrition. I should like to see a school luncheon established in all our schools, where a child can get a nourishing luncheon for a nominal price instead of investing his pennies in cheap candy. In this way a student's efficiency would be increased.

Tonsils and adenoids are another drawback. Take a child suffering from malnutrition with tonsils and adenoids—of this frequent type each community has its share. He stumbles along in classwork only to find that he is not equal to the mental tax imposed on him. When we reflect that this condition may cause deafness and enlarged cervical glands, chronic nasal catarrh, various digestive disturbances, and offer a chance for the tuberculosis germ—also reflex disturbances which may manifest themselves in eneuresis and chorea—we cannot lay too much stress on their early and complete removal. A frequent post-operative picture is that the child manifests decided mental and physical improvement. A large percentage of pupils have defective teeth. This condition is often directly responsible for digestive disturbances and decreased nutrition.

Eye-strain is the most frequent optical condition we meet. Teachers often detect these pupils by their strained expression. The card test should be applied to both eyes. When a child is too small to read the numerals and letters of the alphabet, it is a good thing to use the animal card test. Parents of these children should be notified and proper treatment instituted.

Although trachoma is not frequent in this country, it nevertheless merits careful attention. Frequent periods of quiescence of the inflammation make it doubly imperative that we be on the watch. I firmly believe that every pupil's eyes should be examined for this disease. Without examination, the carrier will go about spreading infection to other children. When in doubt as to diagnosis, exclude the child for two weeks. At the end of that time, if diagnosis is not confirmed, the pupil may return. Immigrants having trachoma are not admitted to this country. This fact discloses the importance which the Federal Government attaches to this disease.

Attention should be paid to the furniture in our schools, as often poor seating will cause curviture of the spine, round-shoulders, etc. The cleaning of the school is also of importance. Dust spread by sweeping is a frequent source of infection. Such diseases as scarlet fever, diphtheria, measles, pink-eye, etc., can, in my judgment, be spread to others by dust in the air of the school-room. Plenty of soap and water, scrubbing-brushes and mops should be used; and I think that a woman should help in cleaning our schools, as she has the housekeeping instinct, which few men have. Floors should be oiled at least twice a year. The vacuum cleaner is a very excellent adjunct, when obtainable, and should be installed in all school buildings.

Fumigation of school buildings is also an important procedure, and should be thoroughly carried out. This would greatly diminish the spread of contagious cases.

For the last few years the subject of sex hygiene has been widely discussed. Although people differ on the advisability of instructing pupils, most of us will admit the necessity of enlightening all children at some period. It is too broad a subject to be left to one person to undertake this task; and I really think that the parent or family physician should be the one to do so. But no doubt it would be possible to find a teacher in each school who would be sufficiently tactful to deal with the children at the psychological moment.

Medical inspection in our schools should not be carried on as a necessary evil, but as an indispensible benefit. Proper inspection will call to the minds of parents the physical ills of their children, whereas before they may have been careless. It instills in the mind of these children to look after their body, and its cleanliness. The child grows stronger, mentally and physically. He is laying the foundation for his future manhood; a stronger mind usually follows to be built upon the basic unit, his body. A child so equipped will grow into a healthy man, ready to take his place in the world.

The school gains the benefit thereof, because a healthy child can always make more progress than a delicate one. He keeps up with his classes, is not a strain on his teacher, and makes the scholastic standing higher.

Medical inspection of schools should not be alone confined to our usual routine examinations. The future is bound to disclose to us a wider and I think just as important a field of work. We will come to consider eugenics in its relation to school work. Also child hygiene will receive a most important place. The finished product, our ideal child, can be attained first by uniting the proper cells. In helping this, no doubt our social and other environments will play their parts. The time will come when marriage licenses must be accompanied by a health certificate. In this way would many mental unfits be lessened—their kind should be segregated, or possibly rendered sterile. Why not start with our present school children, and teach them certain fundamentals along this line?

Most young girls enter marriage without the least mental or physical training for this, their most important place. They become mothers without the least conception of the care of the infant, with the result that the child is often lost. Her bitter knowledge is only attained at this costly price. Knowledge and training would have prevented the tragedy. This should be taught in our schools when their minds are ripe for it. Our system of crowding and cramming our subjects full of oftentimes needless knowledge will very often unbalance an already too delicately balanced nervous system or create them out of healthy minds and bodies, with the result that the future father and mother are wholly unfit for their place in life—a national weight in every conceivable sense.

Medical school inspection has yet to prevent crowded curricula; they produce a nervous strain (the entering hammering pathological wedge).

Let us see that our normal schools teach child hygiene and physiology in their practical application to our children. Let us also see that these are carried out.

I should like to make a request of the medical profession, to act more in harmony with the medical inspection. Acting in accord with one another will help the cause of humanity. Of course there will often arise difference of opinion between the diagnosis of the medical inspector and that of the family physician. Try to bear in mind that in a decision pertaining to medical inspection, we have to be governed by what is best for the majority, although it may be a hardship for the individual. We must be always on the safe side, protecting the many, rather than gratifying a few.

## THE NECESSITY FOR EARLY TREATMENT OF SQUINT.

**George E. Deely, M.D.,**

Brooklyn-New York.

AS MEDICAL science is accomplishing and demanding so much in a preventive way in all its branches, and as it is incumbent upon us pursuing special branches in medicine and surgery to bring to the attention of the practitioner of general medicine the necessity of preventative measures in our particular field, I desire to direct your attention to the necessity for the earliest possible treatment of squint. The practitioner of general medicine appreciates the importance of and relief given by a proper refraction. Many headaches, gastric and other symptoms have yielded to a correct estimation of errors of vision, and now the physician is so keen upon the point, he insists that the patient complaining of headaches at all suspicious of eye strain visit an opthalmologist. This required many years of urgent demand upon the part of the opthalmologist. The opthalmologist has also been educated to the employment of finer detail in the art of refraction; consequently his work gives greater satisfaction to the patient and physician.

A new born infant gives no evidence of knowing how to direct its eyes or interpret what it sees, but the sense of touch is conjoined with that of sight in the unconscious education of the eye, and this education is acquired with exceeding rapidity. The co-ordination of impressions, the correction of illusions by conjoint application of different senses goes on through life, but the capacity to acquire and modify habit is incomparibly greatest in infancy; and knowing how to see is probably one of the earliest of all acquisitions.

The stimulus set up simultaneously by rays of light focused at corresponding points in each retina is transmitted and interpreted as a single impression. This is due probably to the crossing of the optic nerve fibres, the association fibres connecting the different nerve centers, and experience. The normal inter-relation of the centers of the eye muscles and muscular and visual centers produces coordinate movements of the eye balls, and in every direction binocular vision is obtained. Since any habit that might be acquired in youth is apt to become a practice as the child grows, every effort should be made to overcome such important defects as visual ones before they have continued too long a time.

It is a fact that we see more (strabismic) squinting eyes than we should, eyes that are practically useless, which might have been developed to a higher state of usefulness or at least to a greater helpfulness to the possessor thereof; if the oculist had impressed upon the physician the importance and necessity of proper advice to these sufferers at the onset of this disturbance. The advice that the child will outgrow a cross eye does not measure up to medical progress; such advice may be responsible for an amblyopic eye. One would not advise a patient with a dislocated member to go about his or her affairs with the státement that he would outgrow it; that would be criminal neglect.

Heterophoria, strabismus, or squint is generally ushered in by an occasional squinting or turning of one or maybe each eye alternately. Periodical squinting is an indication of some refractive error or a muscular unbalance, and it may be observed first during convalescence from some childhood or protracted illness, when the tone of the patient is below par; or it may appear when the eyes are given continuous or new work which strains them; for example desk work when the child first enters school. What are the factors that bring about squints? I have limited them to two; errors of refraction, and muscular asthenopia. The squint occurs either because the child has two eyes so different that one sees distinctly and the other not, or the two eyes have such a large error of refraction, that so much energy is consumed in accommodating and converging in order to see near objects that the muscles of accommodation and convergence become so tired that one muscle—the stronger—overpowers the other and the eye turns in the direction of the stronger muscle. This gives the eye an abnormal visual axis, and so the object seen by the two eyes is focused at a different point on each retina. In the one with normal axis it is focused at the fovea centralis, and in the other it is not focused at the fovea centralis, but to one side. This gives a double image, the one focused at the fovea centralis being more distinct than the other. The diplopia so annoys the patient that a place of rest is sought for the eye. The farther the eye is turned from its normal axis the less distinct the image, because it is focused nearer the periphery. Finally the eye assumes as great an excursion as possible, and after a time (a year or years) nature learns from experience that there is only one object and suppresses the second weaker image, *i. e.,* that of the squinting eye, which is called an amblyopic eye or an eye atrophied from disuse. The eye may assume a position showing unbalance of any pair of muscles. This unbalance may be purely congenital in origin, but this is not commonly seen.

## The Frequency of Squint.

There are more convergently squinting eyes than any other variety. The next most frequent are the divergent squints. The reason that the internal strabismus or squint is so common is because the internal rectus is a stronger muscle than the external rectus and its attachment is farther forward upon the globe giving greater leverage and as we Americans are generally farsighted as a race, we have on account of this a well developed internal rectus, and we have, therefore, more internal squints. Hypophoria and hyperphoria are infrequent. The process that the eye undergoes in becoming a squinting eye (and maybe an amblyopic) bespeaks great suffering on the part of the little patient, I say little because the majority are under ten years of age, and it accounts often for the many upsets at school, such as attacks of dizziness, nervous spells, headaches, and doubling of objects, which should forwarn us and prompt us to ascertain what is producing such a train of symptoms.

Do you realize the handicap in a commercial and social way to a person with a cross eye, especially a girl? She is an object of ridicule. In order then to obtain and maintain binocular vision, to relieve refractive errors, or muscular unbalance before they have impaired vision, to prevent the loss of sight in the squinting eye, and to anticipate the disfiguring of the face, general practitioners should advise the treatment of all eyes with even a tendency to squint; for the earlier they are put under proper treatment the shorter will be the treatment and the better the result.

## MINUTES.

## FIFTIETH REGULAR MEETING OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND.

**James Cole Hancock, M.D.,**

Brooklyn-New York.

THE fiftieth regular meeting of the Associated Physicians of Long Island was held at the Hotel Nassau, Long Beach, L. I., Saturday, October 31, 1914, and was attended by about one hundred and forty guests and members. The meeting was called to order at 3.30 o'clock by the President, Doctor James P. Warbasse. The usual order of procedure was changed and the scientific session was placed first. The first paper upon the program, "The Biological Significance of War" was presented by Professor Henry C. Crampton, Ph.D., Professor of Zoology, Columbia University. The second address upon "The Possibilities of Life Insurance" was given by Lee K. Frankel, Ph.D., vice-president of the Metropolitan Life Insurance Company. The third paper entitled, "Social Insurance; With Special Reference to the Workmen's Compensation Acts and the Physician," was read by I. M. Rubinow, M.D., Ph.D. The readers of these papers were introduced with appropriate remarks by the President and their discourses were listened to with great interest. After a short recess the business session was held. The minutes of the previous meeting, having been published in the "Long Island Medical Journal" were not read. The chairman of the Membership Committee, Dr. Albert M. Judd, proposed the following names of applicants for membership and they were favorably acted upon by the Society.

*Proposed by James P. Warbasse.*

John Leopold Bauer, 984 Bushwick Avenue; Syracuse, 1904.

*Proposed by Albert M. Judd.*

Albert M. Bell, Sea Cliff, L. I.
Charles Wuest, 1025 Bushwick Avenue; P. & S. N. Y., 1887.
William C. McCollom, 756 St. Johns Place; P. & S. N. Y., 1903.
Francis W. Campbell, 188 Hooper Street; P. & S. N. Y., 1909.
Henry Aronson, 496 Fourteenth Street; Cornell, 1906.
Henry E. Bell, 859 Sterling Place; L. I. C. H., 1898.

Samuel Linder, 1780 St. Johns Place; Cornell, 1910.
Ralph H. Garlick, 426 Eighty-first Street; Cornell, 1911.
William A. Berendsohn, 598 Carlton Avenue; L. I. C. H., 1889.
William Joseph Baumann, 120 Dikeman Street; Baltimore Univ., 1901.
Parles J. Dukeshire, 498½ Sixth Avenue; L. I. C. H., 1909.
Traverse R. Maxfield, 855 President Street; Michigan Medical, 1884.
Perle B. Brockway, 629 Eastern Parkway; Syracuse, 1908.
Jacob M. Morin, 1115 Bergen Street; L. I. C. H., 1899.
Reuben Finkelstein, 1592 Eastern Parkway; L. I. C. H., 1906.
William M. Ennis, 31 First Place; Fordham, 1910.
Edwin A. Bullard, 354 Ocean Avenue; Dartmouth, 1906.
Michael A. Cohn, 458 Stone Avenue; P. & S., Baltimore, 1893.
Gaetano Bottaro, 334 Clinton Street; Naples, 1899.
Harold Bryn, 313 Union Street; L. I. C. H., 1888.
Benjamin E. Helprin, 1501 Eastern Parkway; L. I. C. H., 1903.
Cyrus Hamlin, 102 Hancock Street; L. I. C. H., 1894.
Samuel L. Weinstein, 1880 Bergen Street; L. I. C. H., 1908.
Frederick E. Elliott, 232 Seventy-seventh Street; Eclec. Cin., 1904.
William E. Thomas, 223 Sixth Avenue; P. & S., N. Y., 1905.
Giovanni Merenna, 1465 Fifty-ninth Street; P. & S., N. Y., 1892.
Harrison F. Murray, 408 Grand Avenue; P. & S., N. Y., 1912.

*Proposed by Victor H. Pentlarge.*

Abraham Ravich, 820 Nostrand Avenue; P. & S., N. Y., 1912.

*Proposed by Henry G. Webster.*

Hartwig Kandt, 2209 Clarendon Road; L. I. C. H., 1906.

*Proposed by Burton Harris.*

William H. Cook, 2402 Silver Street, Ridgewood; L. I. C. H., 1912.
Richard Charles Weithas, 813 Halsey Street; George Washington Univ., 1909.

*Proposed by S. Meredith Strong.*

W. C. Waggoner, 167 Taylor Street; Miami Med., Cin., Ohio, 1903.
Charles A. Campbell, 98 Norman Avenue; Bell., N. Y., 1897.

*Proposed by Henry Joachim.*

Joseph Samenfeld, 122 Pennsylvania Avenue; Univ. & Bell., 1903.

*Proposed by Edwin S. Moore.*

W. Franklin Wood, Bay Shore, L. I.; N. Y. Hom., 1912.

*Proposed by James Cole Hancock.*

George L. Kessler, 588 Bedford Avenue; N. Y. U., 1897.

*Proposed by James B. Dowd.*

Thurston Scott Welton, 842 Union Street; L. I. C. H., 1908.
Silas Arthur Lewis, 574 Bedford Avenue; L. I. C. H., 1910.

*Proposed by Lipperts A. McAmond.*

Joseph Krimsky, 164 Pennsylvania Avenue; Univ. and Bell., 1904.

*Proposed by Robert L. Moorehead.*

Harry Meyersburg, 769 Quincy Street; Univ. and Bell., 1907.

Dr. Frank Overton, chairman of the Committee on Humanics, presented the following report: "The Committee on Humanics has considered the question of establishing a death benefit of about two hundred dollars for members of the Associated Physicians of Long

Island, payable immediately after death. The committee finds that the number of members dying has been as follows:

| | |
|---|---|
| 1914 to October 19th | 6 |
| 1913 | 13 |
| 1912 | 8 |
| 1911 | 12 |
| 1910 | 5 |
| Total | 44 |

"This is an average of nine deaths per year, but with the increase in membership and in age, the number of deaths will undoubtedly increase. The committee feels that the number of deaths would necessitate an annual assessment so large that it would be burdensome. It therefore advises that the plan for death benefits be not instituted."

The report of the Committee on Humanics was ordered accepted and filed by the Society.

"The Legal Committee," in a telegram received from the chairman, Dr. M. B. Heyman, requested authority to urge Senator Boylan to amend his drug law to make legal relatives responsible for maintenance while a patient is under treatment in a hospital and when relatives cannot pay then the municipality to be responsible. This report was accepted and authority given by the Society.

Dr. Charles Eastmond, chairman of the committee appointed to discuss the advisability of raising the annual dues, reported "progress" and stated that he gave notice that he would move to amend the By-Laws with relation to dues at the January, 1915, meeting.

The following resignations were accepted by the Society:

Thomas F. Nevins
Walter C. Wood
Herman Wahlig
Alfred Shipman

The following Auditing Committee was appointed by the President:

Charles Eastmond
Frank T. DeLano
Warren L. Duffield

The following Nominating Committee was also appointed by the President:

H. Beeckman Delatour
Samuel Hendrickson
William B. Brinsmade

There being no further business the meeting was adjourned and at 6.30 the guests and members sat down to a very enjoyable dinner. At the close of the dinner there was a general assembly in the "sun parlor" to listen to a most interesting and eloquent address by Dr. Lewis S. Pilcher on "The Victories of Peace." The Entertainment Committee had arranged for some very excellent musical selections, which were rendered by Mr. Irwin E. Hassell, accompanied by Master Oscar Wasserberger.

We left Long Beach aboard a special train kindly furnished by the Long Island Railroad after having had a most enjoyable and successful meeting in every way.

James Cole Hancock, *Secretary.*

# EDITORIAL

## DISCRIMINATION IN TAXES.

TO begin with, this is not a dissertation on real estate or personal property nor upon the wisdom of a single tax. It has to do with the curious viewpoint expressed in an editorial in a daily newspaper lauding the action of Congress in exempting patent medicines from the war tax, which takes the stand that as patent medicines are sold to the poor in remote districts where drug stores are few and far between, that as these patent medicines are for the most part cherished household remedies and are in fact often identical with regularly written prescriptions, and as paternalism in government should not attempt to interfere with the laudable custom of self-drugging, such a tax is unwise. It further urges that the legal requirement of printing the formula on the bottle affords sufficient protection against those that are distinctly injurious. All this sounds well and may satisfy the superficial reader, but it merely scratches the surface and does not begin to show the true inwardness of the situation. That the label does guide the consumer more or less truthfully is undoubtedly so, as is proven by the case of two fishermen in the prohibition state of Vermont. They had driven from the thriving village where they lived some miles into the country for a day's outing, and had been careful to provide an adequate supply of "bait," as they supposed. Denatured alcohol is the form of bait most readily obtained in Vermont and a little will satisfy the ordinary palate. In this particular case the supply proved inadequate and the unfortunate fishermen visited the country store in an effort to supply their needs. The only thing they could find was a certain brand of stomach bitters, the alcoholic content of which, as described on the label, seemed to fill the bill. Unfortunately they overlooked certain secondary actions of the compound, and its combined intoxicating and laxative properties late in the afternoon resulted in their being reduced to a state that exhausted the vocabulary of the good samaritan who found them by the roadside and who vouches for the tale. Yes, the label does protect, but the protection is not so much for the consumer as for the manufacturer who is enabled to market his wares in spite of government restrictions upon the sale of alcohol and narcotic drugs. The consumer pays the war tax, but the patent medicine man pockets the profit.

We trust to be forgiven if our interpretation of the situation is unjust, but the inference seems conclusive. In spite of the restrictions imposed by the necessity for publishing the amount of opium in each fluid ounce, soothing syrup is still sold largely and among the very ones to whom it does the greatest harm—the ignorant and credulous. The Boylan law in this state exempts patent medicines containing alcohol and narcotics which may be sold without restriction *provided the druggist believes the purchase* *to be made in good faith.* If the drug habitué has the money he may still purchase cocaine and opiates, such as heroin, to his heart's content. We are convinced that a tax upon such preparations would work nothing but good to the consuming public and could elaborate the subject almost ad infinitum were we not convinced that physicians fully recognize the commercialism which is the underlying reason for the present exemption.

H. G. W.

## "THE CHEMIST OPTICIAN."

"A NEW book published by the *Chemist and Druggist,* of London, telling druggists how to take up and make money out of this most profitable branch, tells you how to test sight, fit glasses and fill prescriptions—a money-making book for every druggist." This interesting announcement culled from a drug journal published by a large jobbing house is a logical sequence of the privilege granted optometrists by the state legislature. The enormous and disproportionate profits arising from the sale of spectacles has long been known to the initiated who have fully appreciated the real ambition of the optometrists. Their lucrative business is likely to be cut into when the retail druggists start peddling spectacles. H. G. W.

## PUBLIC HEALTH SERVICE.

ONE cannot help but be struck upon reading the list of questions which have been published by Surgeon General Blue of the Public Health and Marine Hospital Service by the frequent recurrence of the subject of demography. At a recent investigation of certain city departments the successful contestant for the position of demographer was asked to define the nature and requirements of the position he held, and his answers were so very vague as to lead one to suspect that demography is as yet a sort of scrap basket into which most questions of life, death, birth and marriage are thrown. Certainly one may doubt how many physicians, without special training for the work, could answer offhand such questions as to how to determine the rate of increase of population during certain periods and how to estimate the probable population at some future date. It has been warmly urged in some quarters that the Public Health Service should be made the nucleus of a National Department of Health removed, so far as may be, from the sphere of politics and empowered to coapt the present State Departments of Health into a homogeneous body. The idea seems an excellent one even at first glance as the Department at present constituted is readily capable of rapid expansion. The JOURNAL has previously pointed out the incongruous condition of affairs that exists by reason of the widely different requirements of the health departments of neighboring states, and even municipalities, whereby the careful requirements and intelligent control of disease in one locality may be rendered nugatory by the laxness of a bordering state. The general proposition seems to be favorably considered and only its details are questions for discussion. If the American Medical Association will take the matter up at Washington and the general medical public will back up the Association, we may count upon the early adoption of a much needed reform in our public health laws.

H. G. W.

## THE PERVERSITIES OF LIFE.

A NEIGHBORING weekly periodical has recently solicited our private patronage and has sent sample copies with the request to subscribe. The corruscations of scintillating wit that thorough search will sometimes reveal in the pages of this weekly are supposed to make it suitable for the physician's waiting room table where patients may beguile their anxious waiting by the humor and dainty satire of its pages. In the sample copies which we have recently received two items in particular stand out from the common ruck, which should in themselves persuade every physician to subscribe on the instant. One of these is a propaganda in favor of anti-vaccination, a comparatively new departure; the other, the time honored crusade for anti-vivisection. It has occurred to us to wonder whether the powers that be behind this well-known paper have children of their own, and if they have, are they esteemed more than the family lap dog? In this unselfish age we cannot believe it possible that mercenary motives can have anything to do with the question. Our personal feeling, and it is purely a personal expression, is that the management of a paper which makes a particular feature of attacks upon the medical profession, which idealizes the dog, the guinea pig and the rat while it lampoons the doctor, suffers from a peculiarly dense form of mental obtuseness when it adds insult to injury by inviting him to subscribe. Physicians who may be tempted to place New York *Life* upon their waiting room tables should consider the declared attitude of the paper before helping to pay for the warfare that it is urging against them.

H. G. W.

## THIS, TOO, MAY COME.

MUCH has been said and printed during the last few months in regard to the late results of the present European struggle on American commerce and industry. No matter what the war's outcome may be, it is improbable that the United States, with their unlimited resources of all kinds, will suffer seriously in the long run, and we have the comfort that in this respect at least we will be able to get along very nicely without the help of any of the warring nations, and in particular without the help and good will of Germany, which we are bound to lose by the onesided attitude of the American press and of a large portion of the American public. Raw materials and manufactured articles, however, are not the only goods for which Germany and Austria have created a strong demand in this country. For many years Americans have partaken of the fruits of German learning and scientific investigation right at their well set table, and every one of these American guests will bear witness that he has been served liberally and with a fine spirit of hospitality. American physicians in particular migrate every year to Berlin, Vienna, Munich and other centres of medical learning and return to these shores, filled with the inspiration of the work they have seen and in the possession of valuable special knowledge and skill, which helps to raise them above the rank and file of many of their colleagues, who have not had the same opportunities. Would it be surprising if the American student would be "persona non grata" at the German universities after peace has returned to Europe? One may answer that if this happened Americans could and would do their postgraduate work right in this country. By years of effort we may succeed in gradually developing teachers and methods of teaching equivalent or better than those of Germany; but, under the conditions prevailing in this country, it will hardly ever be possible to make the full and unrestricted use of the clinical material at hand, which is so very important for the inauguration and trying out of new methods of diagnosis and treatment. Furthermore can a postgraduate school in New York or Chicago ever create the peculiar atmosphere of scientific interest, the broadening effect of different men and methods, or the personal influence of a great teacher on his hearers, which is so stimulating to their future development!

Hartwig Kandt.

## VOLUME IX, NUMBER 1.

In entering upon its ninth year, the Journal feels some justifiable pride in pointing to its increase in both quantity and quality. The necessary limitations of cost have compelled the Journal to keep within the forty page limit, but the accumulation of original papers has been such as to require the present double number. With improving conditions the Journal hopes to make its limits sufficiently elastic to offer prompt publication to the constantly increasing number of its contributors.

At this time it may not be amiss to urge upon the members of the Associated Physicians of Long Island that, in their capacity as proprietors of this magazine, it is both their duty and privilege to do all in their power to further the interests of the paper. The least that they can do is to intimate to advertisers that their advertisements are seen and read. Physicians are, we fear, apt to neglect this simple courtesy. Among your New Year's resolutions don't neglect the Long Island Medical Journal.

H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

*Regular Meeting, November* 6, 1914.

The President, Dr. Frederick C. Holden, in the Chair.

### Specimen of a Uterus.

*S. J. McNamara, M.D.*

This is a specimen of a uterus with a small interstitial fibroid, the whole specimen about the size of a pear, which was removed from a nulliparous woman of about fifty years of age. She presented herself with protruding vaginal walls and the os uteri at the introitus. She had had two previous operations in different hospitals in this borough, the nature of which I could only surmise, probably vaginal. The history shows that the menses began at sixteen, was regular, and of the painless twenty-eight-day type, of five to six days duration. She was left an orphan at an early age, began work at fifteen, and shortly after that time noticed a small protrusion at the vulva which gradually increased in size. This protrusion was felt before the menses began. The first operation was done when she was twenty-one, the second fifteen years ago.

After opening the abdomen the ovarian and uterine arteries were tied off and the uterus cut from its lateral supports in the V-shaped manner that the specimen shows, after the method of Crile. The fishtails left were then brought up separately through an opening made in the fascia about one inch from the median incision, and lapped for one inch over each other on top of the fascia, sutured to each other and to the fascia with chromic and plain catgut. The patient had an uninterrupted convalescence with primary union. She was discharged with every assurance of a cure and returned to work. The uterine cervix is now at the introitus the same as before the operation. It is impossible to say whether the ligaments at the abdominal wall have become attenuated or broken. The cystocele is marked now, as it was before operation. The fact of the woman having no laceration of the pelvic bands made me think the operation was indicated, and that the fixation of the small cervix would do. I report the operation as a failure to fulfil what seemed a clear indication for this class of work.

Dr. Pomeroy:—I trembled when I heard Dr. McNamara say the woman was fifty years old. I have done two operations on patients of that age and thought possibly it was one of my cases. The first operation was twenty-one years ago. I operated about eight years ago on a nullipara. I did the classical interposition operation, one of the first I experimented with. A few years later the fundus was in the cystocele. I again operated and did a plastic operation. At the last report she was comfortable.

Dr. Shoop:—The first case of procidentia I operated on was a nullipara, and had the uterus presenting as in the case described by Dr. McNamara. I drew up the uterus, denuded a spot one inch in diameter on the upper posterior surface and stitched it to the fascia. She went home in about three weeks after the operation. She did heavy work, washing, lifting a heavy tub and as a result the attachments were broken with a return of the prolapse. I then did a complete hysterectomy and fastened the vaginal tissues with the peritoneum into the fascia again. The abdominal wall was flabby and a year later she presented herself with a cystocele and rectocele.

Dr. Baldwin:—I have seen cases of procidentia in nulliparous women and one of the things I have noticed is that the cervix is generally elongated. Cystocele in such cases is not uncommon. I have seen several. I have two Sisters of Charity who are wearing pessaries for cystocele. In my opinion this all goes to prove that the uterus is not supported by its ligaments and the tissues above, but by the pericervical structures.

Dr. Dickinson:—The worst prolapse I ever saw was in a nulliparous woman. It was not so bad because of the fact that so many structures were involved; it was unusual because there was a double handful of bowels protruding. The enterocele was made up mostly of the posterior vaginal wall. I presume it was one of those cases that are due to a congenital lengthening of the rectovaginal pouch where the peritoneum dips to the pelvic floor, and where there is a marked fascial gap along the line of the vaginal wall which drops down through. She had had three plastic operations from below. I proposed to open the abdomen and obliterate the whole cul-de-sac, but she did not like the idea, and continued to depend upon a large napkin she was wearing.

The point that has been made of the conical cervix boring its way through the pelvic floor is very strong: most of the virgin prolapse cases are of this character. Abdominal fixation is often a failure because of the extreme relaxation of the abdominal wall. Hernia through the vaginal opening is easy to cure as far as the uterus is concerned. The weak spot is the water bag that will make hydrolic pressure when pressed from above or jounced. Dr. Baldwin's work is important in building up a good bar beneath the bladder. There is a field for fixation of the bladder to the belly wall, high up.

Dr. McNamara:—In my case the cervix was not abnormal, the vaginal portion was not an inch in length. There was evidently some congenital condition and absence of fascial attachment, but it was not diagnosed. This protrusion appeared before the menses and that would lead one to suspect some congenital defect. There was no splanchnoptosis. She might have been rachitic; she had a scoliosis and some angularity of the pelvis from the normal which might be considered as a causal factor.

## Fetus Removed by Cesarian Section.

*R. M. Beach, M.D.*

I wish to present a specimen removed by Cesarian section. The mother was admitted to the Jewish Hospital, on April 12th, with a history of having had a craniotomy done in 1913. The section was done with complication, but it was very difficult to resuscitate the child; it breathed spasmodically, but we expected with oxygen and flagellation to save it. It became worse and died two and one-half hours after birth. After some difficulty we managed to procure an autopsy, and on opening the chest cavity we found a hernia of the diaphragm and almost the entire right lobe of the liver and a portion of the transverse and ascending colon in the right pleural cavity; there was a volvulus and the gut was distended. There was no evidence of the right lung, except a small stump at the root of the right bronchus. The pericardium was very much pressed upon by the mass. These cases are fairly rare, and this is the first that I have seen. The lesson is that all these cases should be autopsied, as many times the doctor is blamed, and when the family will not allow an autopsy which would show the true cause of death it always hangs over the doctor as his error. In this case the hernia of the diaphragm is large enough to admit three fingers. Very shortly after this case there was a case of twilight sleep with six or seven doctors in attendance. The baby died and at the autopsy they found the same condition of hernia on the left side.

Dr. Dickinson wished to endorse heartily the call for examination of still-born babies. As an example he mentioned a case where the baby had had the cord around its neck at birth. This is scoffed at often as an excuse for losing the child at delivery. After sixteen hours death followed from convulsions. The autopsy showed a thin film of blood all over the brain.

Dr. Humpstone spoke of a case where it was believed that the death of the child had been due to atalectasis. Autopsy showed that there was an abscess of the lung.

## X-Ray Picture of Microcephalic Skull.

*O. P. Humpstone, M.D.*

I wish to present two X-ray pictures of babies' skulls. One, a microcephalic which was born under the twilight sleep method. The picture shows the fontanelles nearly closed and the thick bony union of the sutures. The comparison with the other which is of a normal head is quite striking. The baby is going to live, but is far from well. The parents are laying the condition of the child to the twilight sleep. We had this baby examined by Dr. Tilney with a view to the possibility of doing a craniotomy, but the doctor stated that babies who are born with premature ossification of the fontanelles are not normal, and that the brain is intrinsically undeveloped before the baby is born.

Dr. Beach:—The interesting question is whether microcephalic babies should be operated upon. I had a case recently of a child born with a microcephalic condition, which during the first two or three days was cyanotic, rigid, did not nurse well and showed signs of intracranial pressure. I thought it was due to traumatism at birth. A day or two later the cyanosis had cleared up, the rigidity had disappeared and it was nursing. Should such a case be operated upon? Does any one know what the statistics are in such operations?

Dr. Pfeiffer:—Two or three years ago I had a case in which the fontanelles were closed. The baby developed convulsions on the third day and died. I was inclined to believe that the death might have been due to the forceps delivery. This woman had had one other child which had died on the third or fourth day.

## Specimen of Uterine Fibroid.

*Eliot Bishop, M.D.*

This patient came into the hospital two weeks ago. She had been operated on in Jersey City in December, 1913, the abdomen being opened and closed without further operation. She had menstruated regularly and at the time of my examination I found what seemed to be a soft tumor connected with the uterus, which had the feel of a cyst. I took out the uterus a week ago today. In the posterior wall of the uterus I found this soft mass which seemed like placental tissue at first touch and which proved to be a myoma. It had been mistaken for a pregnancy at the previous operation.

## Specimen of Uterine Fibroid.

*Ralph H. Pomeroy, M.D.*

I removed this specimen at the Brooklyn Hospital two weeks ago. It is the kind of case in which physicians are apt to assume that the patient is capable of taking care of a fibroid that may be present, an idea with which I do not agree. I think these cases should not be neglected. This patient was a big strapping negress who had had a chill before coming to the hospital. The abdomen was distended, there was no vomiting, but she had abdominal pain. The history showed that she had pain for three weeks, and that there was a metrorrhagia with hemorrhages for about two years. Operation was postponed for twenty-four hours for observation. Her blood count did not show leucocytosis, but she had some rise of temperature. On opening the abdomen the omentum was found adherant and there was a profuse gush of peritoneal fluid. The hysterectomy was difficult on account of the adhesions. The operation was terminated by supravaginal splitting of the stump for drainage. It was noticed that the rectum and sigmoid were edematous and infiltrated. The patient had blocked tubes and a mass on the side where the pain was felt, the contents of which was cultured and found to be sterile. The fibroid had a calcareous mass in the wall. The subsequent history is stormy, but hopeful. The abdominal wound is clean, but the discharge from the cervical drain is foul. She developed pneumonia on the fourth day, but is doing fairly well.

Dr. Baldwin:—This case is interesting and goes to prove that the statement that fibroids should be left alone is all wrong. We used to hear of cases in which fibroids had disappeared, but I have never seen a case, and I have examined many that were said to have been absorbed. I believe that many old women die of "cancer" that have merely degenerating fibroids. When a fibroid interferes with the health of a patient it should be removed.

Dr. Polak:—There are a number of these myomatous growths that are indistinguishable from pregnancy, even when the abdomen is opened. I have been opposed to hysterotomy for diagnosis, yet should I meet again such a tumor as I met two years ago, where I opened the abdomen and felt the uterus, believed it was a pregnancy, had a chance to follow her a year and then find my mistake, I would do a hysterotomy. The physical picture elicited sign after sign that indicated about five months of pregnancy. The menstrual history was irregular, periods every two months with spotting for a day or two. My first opinion was that she had a fibroid, and yet when I opened the abdomen I was convinced that she was pregnant.

Dr. McNamara:—I appreciate some of the things that Dr. Polak speaks of, as in the past year I have seen a uterus taken out which was subsequently found to contain a fetus. It is not easy to diagnose.

Dr. Judd:—Some years ago I operated on a woman to cure sterility, the seeming cause of which was a soft cystic fibroid about the size of a fetal head. This I removed by myomectomy and inadvertently opened the uterine cavity and found that she was the subject of an early pregnancy. She recovered and has since had two children.

### Fibroid Uterus with Adenoma of Ovary.

*W. A. Jewett, M.D.*

I desire to present a specimen of fibroid uterus and cyst-adenoma of the ovary, which had ruptured without symptoms; that is, there was nothing in the history to indicate the time of rupture of the cyst. The patient was fifty-two years of age, single, with a normal family and previous personal history. Five years ago she had apparently reached the menopause, as the menses stopped for six months. She then began to flow irregularly, and noticed an increase in the size of the abdomen. About two years ago, she consulted her physician, who diagnosed fibroid and instituted treatment with the X-ray. She was given a ten-minute exposure, ten inches from the target, every other day, which was followed by an apparent decrease in the size of the tumor and freedom from bleeding for several months. With the recurrence of the flow the treatment was resumed, but the results were not as satisfactory as before, and last spring seemed to have no beneficial effect. The first of October she was referred to me for surgical attention. Examination showed heart and lungs negative, hemoglobin 65 per cent, abdominal walls tense, free fluid in the abdominal cavity, and a tumor which reached to the umbilicus coming from the pelvis. Diagnosis of uterine fibroid was made. On opening the abdomen, about a quart of reddish-brown fluid was found in the peritoneal cavity, and the right ovary, which is presented, was found well up under the liver, on the right side. The point of rupture you will notice is about one-quarter to one-half inch in diameter, and has a smooth rounded edge. It would appear to have ruptured some weeks before the operation, without causing any shock. The peritoneum was cleansed and the wound closed without drainage. Uneventful recovery.

### Two Cases of Intestinal Obstruction.

*A. M. Judd, M.D.*

I wish to report two cases of intestinal obstruction, one of which was operated on a week ago last night. The other case was operated on at one of the hospitals over the river for hypertrophied cervix. The operations were Kiteridge operation for amputation of the cervix; appendectomy; shelving operation; elevating the pelvic floor, round ligaments stitched to the peritoneum using six stay sutures; overlapping from left to right in closing the abdominal wound. She was operated on nine weeks previous to the time I saw her. When she came into the Jewish Hospital there was an obstruction of the intestine by adhesions. She died four hours after the operation.

For some years I have been opposed to ventral suspension as I have seen bad results from that procedure. One case I can recall, a case that was under the care of Dr. Humpstone, who found it necessary to do a Cesarian section to save the child.

#### History of First Case of Intestinal Obstruction.

G. G., aged thirty-six, married, Russian. Admitted 9.11, died 9.12. Diagnosis: Intestinal obstruction, post-operative, due to band.

Family history negative. Previous history: Had pneumonia at 30; had pulmonary condition for three years. Surgical: Had curettage in 1910 for metrorrhagia. Operated on nine weeks ago for some uterine condition as a result of a labor nine years ago. (Gastric condition remedied at same time?) Menstrual: Began at fifteen; regular, monthly flows six days; no pain. Last regular menses June 7th. Marital: Married fifteen years; five children, last child three month old; normal labors; one miscarriage about nine and a half years ago for three weeks pregnancy. Venereal denied; intense leucorrhœa for last two years. Habits: Always constipated. No urinary symptoms.

*Present Illness.*—For last two years patient had had menses about four days before the regular date, intense leucorrhœa and pruritis of vulva; had facial neuralgia and disturbances of hearing; on June 7th last regular flow occurred. Was treated for nervous condition, as a cause of her symptoms, and operation was advised as a relief. On July 2d menses occurred, and on July 7th she was operated upon at Mount Sinai. Patient believes some gastric operation and appendectomy were done at same time. On July 16th patient had hemorrhage. Returned home from hospital on August 1st. On August 17th a profuse flow occurred for four days. Since her operation patient has been suffering from obstinate constipation, tympanites, abdominal cramps, acid eructations. This morning she was seized with sudden abdominal cramps, vomiting of food, (yellow color). She had a bowel movement yesterday and today.

*Physical Examination.*—Middle-sized woman, emaciated, pale, acutely ill. Chest negative. Abdomen: Flabby, adipose wall; median scar below umbilicus; marked asymmetry visable appearing like the curve of intestinal coils; intestines palpable and tender; percussion reveals marked tympany in upper part of abdomen, but some dullness below. Examination otherwise negative.

September 11, 1914.—Examination by Dr. Judd. Scar of previous operation in abdominal wall. Considerable distention of small bowel, but no tenseness. Hard, tender mass in hypogastric region about two fingers above the pubes. Vaginal introitus: slight relaxation; slight bloody vaginal discharge; old laceration on posterior vaginal wall; unhealed granulating depressed area at vault of vagina, evidently site of operative procedure; tense cystic mass occupying false pelvis and pressing down on anterior vaginal wall; fluctuating.

September 12, 1914.—Operative findings: Incision in median line, partly through old scar into peritoneal cavity; free bloody fluid in peritoneal cavity; distinct marks of previous operation, also plication of the utero-sacral ligaments. Adhesions of left broad ligament to the anterior parieties below and to the right of this forming an opening through which small gut had fallen and was held in pelvis, causing intestinal obstruction. Ventral suspension destroyed. Intestine assumed normal hue. Rectal tube inserted and gas escaped freely. Rubber dam placed across the brim of true pelvis; gauze packing placed on anterior surface between it and uterus. Patient sent to ward in trendelenberg posture after closure of wall around drainage; three silk worm through and through sutures. About three feet of gut affected. Patient in collapse on operating table; did not recover. Expired 6.15 P. M. day of operation.

### History of Second Case of Intestinal Obstruction.

Mrs. V., age forty-six. Previous operation: ventro suspension, perinoplasty and appendectomy; complication; slight wound infection; eight months before present illness.

Present illness: one week before admission to hospital complained of general abdominal cramps, relieved by enemata; no nausea, no vomiting. Twenty-four hours before admission complained of severe abdominal cramps; intermittent; nausea; no vomiting; with first two enemas had bowel movement; with following enemas had no bowel movement nor expelled gas; eight hours after onset of pain abdominal examination showed slight distension and a bulging mass the size of orange in left lower quadrant; general condition good. Abdominal section: extensive plastic peritionitis with omentum wrapped around suspensory ligament of uterus also to three knuckles of small gut forming a small opening through which a portion of small intestine (six inches in length) had slipped and become incarcerated. Adhesions separated; incarceration relieved; no intestinal resection necessary. Patient made uneventful recovery.

## Percy Operation for Cancer of the Uterus.

*A. M. Judd, M.D.*

I wish to report a case of carcinoma of the uterus operated on by the Percy cautery method. The Percy cautery operation was done with the assistance of Dr. Commiskey who had his hand in the abdomen pressing down the uterus. I want merely to put it on record as I think it is the first real Percy in Brooklyn. Four days after the operation the woman developed a urinary fistula. As the operation was done twelve days ago I do not know whether the fistula is uretero-vaginal or vesico-vaginal. The effect at the time of the operation was beautiful.

## Case of Ectopic Gestation.

*A. M. Judd, M.D.*

The ectopic I wish to report I reported at the Graduates Club a few days ago. This patient had a history of three hemorrhages before entering the hospital. It was Monday afternoon when she was received and at that time her blood pressure was 108. My operating day was Tuesday, and I felt that it was better to wait. She improved up to 9 P. M., that evening when her blood pressure was 120; at 9.15 she was worse and her blood pressure had dropped to 75. I saw her then and still decided to wait as she was practically moribund. She died the next morning. I report this case to show the result of waiting. Some years ago I stated that I preferred to wait in these cases; I now say that I will not wait in the next case.

Following is the history of the ectopic:

B. G., aged twenty-seven, admitted October 19, 1914; died October 20, 1914; Russian; housewife; family history negative. Previous history: medical, negative; surgical: curettage after miscarriage in April. Menstrual: began at thirteen, regular twenty-eight-day; flow three days; moderate amount, no pain, no disturbance; last regular flow two months ago. Marital: eight years, two children; oldest six, youngest four; normal labors; no post-partem hemorrhages; one miscarriage at three months; another miscarriage in 1912 at five months. Venereal denied; white flow for two years. Bowels normal.

*Present Illness.*—Last regular period two months ago; three weeks later spotted for two days; no accompanying symptoms; negative until October 5th, fourteen days ago; siezed with abdominal cramps, agonizing, over entire abdomen; later more stabbing in character, accompanied with vomiting, diarrhœa, abdominal tenderness, syncope, sweats and chills. There was no rise of temperature. A few days later second acute attack, and last Saturday, October 17th, third attack. Since last attack gradually becoming weaker, more pale and anemic in appearance; pain and tenderness more localized in right lower abdominal quadrant. There is negative vomitus; stool. No curettage had been done.

*Physical Examination.*—Young female adult; acutely ill; very pale and weak in appearance; blanching of mucous membranes and nails. Head and neck: icterus tinge to conjunctiva; very much coated, dry, anemic skin; chest negative. Abdomen: very tender over almost entire abdomen, but located mainly in lower abdomen and right iliac area; no rigidity; no masses palpable; dullness over lower abdomen especially in flanks and mostly in left side. Extremities pale, nails whitish and anemic.

October 19, 1914.—Examination on admission by Dr. Judd.

Abdomen distended; intestines floating over free fluid; lower abdomen percusses flat; upper abdomen is tympanitic. Old second degree laceration of posterior wall; right sulcus worse than left; cervix old bilateral laceration; pushed downward and forward; passive mobility of cervix causes tenderness; posterior cul-de-sac filled with doughy, tender mass which extends into both sulci; more extensively on right.

| | | | | | | |
|---|---|---|---|---|---|---|
| Temperatures........ | 100.6 | 99.8 | 99.8 | Blood | 19,900 W. | 2,230,000 Rd. |
| Pulse................ | 140 | 130 | 144 | | 89 | 55% H6 |
| Respiration.......... | 40 | 26 | 32 | | 11 | |

| | | | | |
|---|---|---|---|---|
| Blood Pressure...... | 10=19 | S. 108 | D. 60 | |
| | 10=19 | S. 112 | D. 65 | |
| | 10=19 | S. 115 | D. 70 | 6 P. M. |
| | 10=19 | S. 120 | D. 70 | 8 P. M. |
| | 10=19 | S. 118 | D. 70 | 9 P. M. |
| | 10=19 | S. 75 | D. 45 | 9.15 P. M. |
| | 10=19 | S. 81 | D. 50 | 11 P. M. |

Treatment: Morphia gr. 1 1/12, Q. 4 h.

Coagulose: 1 vial=10 c.c. of serum; add 8 c.c. of sterile water.

Dr. Chase:—I wish Dr. Judd would give more details regarding the Percy operation; whether he adhered to Dr. Percy's idea of not going beyond the carbonizing point with the cautery; how much the uterus was diminished in size and how long it took to do it.

Dr. Polak:—This case, reported by Dr. Judd, will go down as against the method which has been generally adopted by many surgeons at the present time, who believe it is wiser to wait until after the reaction from shock, before operating in cases of ectopic. This patient came into the hospital with a blood pressure of 108; she improved up to a certain point, her pulse becoming slower, while the blood pressure rose to 120, when there was a sudden drop in the pressure and the pulse began to rise again. The blood clot had been disturbed by the increased pressure and bleeding commenced. The patient had been given saline in addition to morphia. Saline tends to raise the pressure. The point which Simpson makes in these cases is that the patient should be given morphia in full doses and no fluids should be used, and they react. The day following that on which Dr. Judd's case occurred we had a similar case admitted to the other division. She was almost pluseless and very low. Morphia was administered and she was placed in the Trendelenburg position. The following morning her blood pressure was 110, and she was operated on under spinal anesthesia; she made an uneventful recovery. We have had over 140 of these cases with three deaths. We will continue to follow this rule until we can get a better series of results by some other. I believe it is wrong to subject these cases to operation while they are in a low condition; they are tossed about in ambulances and are not in a condition to bear the extra shock. In a very few hours, without stimulation, without saline, without food and with the free use of morphine with careful watching of the pulse and blood pressure these patients will react and the results of operation are improved.

Dr. Baldwin:—I want to say that I place no dependence upon blood pressure. I prefer to use my finger on the artery and to base an opinion on the actual condition of the patient. I do not believe in waiting in these cases; if the case is desperate they may get worse and with rectal saline ready to be given as the operation begins and with a hurried technique, I get good results. I have seen two die without operation.

Dr. Judd:—In answer to the question asked by Dr. Chase I would say that I did the regular Percy cautery operation. It took about one hour and fifteen minutes. There was no immediate diminution in the size of the uterus.

Dr. Holden asked if there had been much sweating by the patient during the Percy operation.

Dr. Judd:—The patient had the appearance of a chronic nephritic, still there was nothing in the urine to show such a condition. Regarding the ectopic I would state that this is the fourth case I have lost in that condition.

The paper of the evening was read by Dr. Robert L. Dickinson, entitled "Notes on English and French Gynecology."

(*See paper.*)

### Discussion.

Dr. Pomeroy:—The trip of the American Gynecological Club was a very interesting one; we certainly ran around the countries we visited for three weeks, and I may say, after listening to Dr. Dickinson's able report, that I also ran. We were overwhelmed by the number and variety of the things we saw and heard in the short time of our visit. I was convinced of one very definite fact, and that is that the best way to be a good gynecological surgeon is to go around, watch the general surgeons and make use of their principles. Jones, of Liverpool, has left a permanent picture of splendid workmanship in my mind, only equaled by that of Kocher, a man of seventy-five years of age, who operated in a goitre case with a skill that I envied. I expect those three weeks of rapid-fire experience to linger in my mind; the lessons are innumerable.

Dr. Polak:—The first point Dr. Dickinson made is that, in both England and France, their organization is distinctly different from ours. They do not allow the internes to appear in the operating room, the assisting is done by permanent assistants who remain with their chief for from three to twelve years. The size of the ligatures they used impressed us all; they use a cable-sized catgut, and it is doubtful if we could get the results they do from such methods. The surgery of all men we saw, aside from Stiles and Moynihan, would never be duplicated in America. They have no conception of plastic surgery and do very little of the sort of abdominal surgery we see in America. Take Dr. Faure. His incision extended from the pubis to far above the umbilicus; his Trendelenburg was extreme, practically inverting of the patient. The peritonealization is not careful. The size of the catgut they use is something we would get trouble from. Their work is clever, but it lacks the finish we see over here. It some of the smaller towns, especially Manchester, they are curing prolapse by a plastic operation from below. Manchester has the largest working population in the world, and Fothergil told me that he had done two hundred and eighty cases of prolapse in a year, and he is only one of the three men on that service. The number of cases they operate upon is certainly very large. It seemed to me that some of the men who are occupying the highest positions are the poorest surgeons, and this applies to men in London, Manchester and Edinburgh. They seemed to be absolutely satisfied with their own work. Another thing which interested us was how small each man's service was; for instance, in Chelsea there were five senior surgeons for sixty beds, and there are a number of junior surgeons and these have a string of assistants. They do not have as much available material as one might expect. In England the service of the surgeons is interrupted, averaging about three months. In France and Germany the service is continuous. The whole technique of the English surgeons, as far as our observation went, was far below the average with the exceptions of the operators in Manchester and Leeds. It is almost worth the trip to see Moynihan operate. The anesthesia in England was universally bad. They use a great deal of ether; in Edinburgh they use chloroform. As Dr. Dickinson has said they use a large quantity, and they do not have the refined anesthesia which we see in this country.

In France they are using local, spinal and paravertebral anesthesia, injecting novocain into the posterior roots of the spinal nerves. The analgesia is perfect, but it is a very difficult thing to do. The patient is in the sitting posture, bent forward, and anywhere from five to seven needles are passed into the roots of the spinal nerves. The work we saw at Amiens was splendid. Pouchet is one of the most wonderful operators in the world. When you think of a man doing an operation on the glands of the neck as Crile would do it, an operation on the prostate as Hugh Young would do it, a hysterectomy better than we could do it, and several gastro-enterostomies, all without making a false move, in a very short time, his skill may be understood. The French surgeons, Pollisan and Pozzi are men of very ordinary surgical calibre. Hartman was interesting because of his extremely simple and dextrous workmanship and excellent finish. He used wire sutures of an alloy and placed them close together, including peritoneum, muscle, fascia, fat and skin which formed a satisfactory co-aption. His anesthesia was probably better than the average. Of the general surgeons Walther is perhaps the most American and appealed to us. They have no internes as we have them here. Their assistants are permanent, and their internes are ward men only, and if a ward man wishes to get into the operating room he may go up by going through the thirteen or fourteen steps which lead in that direction. The anesthetists are paid and they have a sufficient number of them. They simplify their procedures and in the operating rooms have few people in direct contact with the wound. As a whole this trip was less satisfactory than the previous one, because there was less to learn, except from Jones, Moynihan, and the man in Amiens.

## TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

*Regular Meeting, May* 1, 1914.

The President, Dr. Frederick C. Holden, in the Chair.

Dr. Alfred C. Beck read a paper entitled "Fifteen Months of 'Judicious Neglect' in the Treatment of Puerperal Infection." This paper with an accompanying table of cases was publish in the *Medical Times.* It was thoroughly discussed by most of the members present who in the main agreed with the writer's proposition that with few exceptions the expectant treatment of puerperal infection is wiser and gives better results than when attempts are made to cleanse the uterus of infectious material.

Dr. L. Grant Baldwin dissented in so far as leaving a dead fetus in situ is concerned. Dr. Frank Knight reported unfavorable results with hydroxyl injections in similar cases and some comment was made for and against vaccines as adjuncts in the treatment of puerperal infections.

## TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

*Regular Meeting, February* 6, 1914.

The President, Dr. Frederick C. Holden, in the Chair.

The program consisted of a detailed report of the organization and work of the gynecological-obstetric service at the Brooklyn Hospital by the several members of the staff.

## BALL PESSARY WITH HANDLE FOR NIGHTLY REMOVAL IN PROLAPSE.

**Robert L. Dickinson, M.D.**

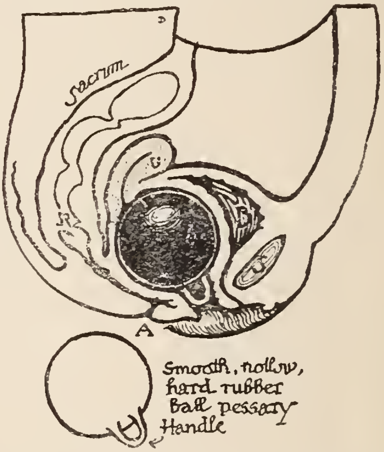
Brooklyn-New York.

PROLAPSE in patients who, for various reasons, should not be subjected to the risk of operation calls for a faithful trial of intra-vaginal support. The circles, hard rubber and soft, the inflated rubber ring or ball, the saucer of Prochownik or Schatz, the cystocle pessary of Byrne or Skene, or even in milder forms, the Smith, Hodge, or Thomas—each has its own place and each will relieve a certain number of cases where there is any pelvic floor at all. The one difficulty is chafing and ulceration. This difficulty is not always overcome by the use of the douche for the reason that the surface against which the main pressure is made, such as the vaginal vault or the anterior vaginal wall of the cervix, is often not reached by the fluid and cleansed because of the closeness of the contact of the support with the particular spot. But chafing or ulceration or embedding are prevented and the frequency of visits to the doctor's office minimized by the employment of a principle very little used in this form of treatment.

This principle is the removal of pressure for one-third of the twenty-four hours. The atrophic mucous membranes of the aged do not well tolerate prolonged pressure or irritation. A pessary which the patient can herself take out at bed time and replace on rising is the desirable form. This is not feasible with the ordinary ball; neither with rings that are provided with a small center opening nor with S-curved pessaries. The Loehlein hollow ring is provided with a handle at right angles to the circle which will allow removal. But it is found in practice that patients cannot readily tilt this device so as to unlock it from behind the symphysis. The tilting brings a long diameter, that from one edge of the circle to the end of the handle, into play and makes removal difficult.

One other removable form of support, the cup on the stem, held by tubing or straps to a belt about the waist is adapted to a very few of the worst inoperable cases and has the advantage of being removed at night. But it is usually found that the cup causes some chafing because the interior organs straddle over its relatively sharp edge. Moreover the cavern seems to stretch progressively so that the last stage of the patient is often worse than the first.

BALL PESSARY



The ordinary ball pessary is not at all easy to remove. Even the gynecologist has difficulty in drawing it out after the introitus has shrunk, as it may after some weeks or months. Again, it is almost impossible for the douche to cleanse the parts behind the sphere. Thirdly, the cervix drawn out or stretched out across the surface of the ball is the area which chafes and this is the particular place in which we deprecate friction. The use of the hollow rubber ball with string attached is a great advance. As usually made the hole runs into the interior of the ball and that interior grows rank and even though the hole for the thread has no communication with the sealed interior the threads themselves grow foul.

I have combined the principle of the ball pessary with the handle of Loehlein by making the smooth sealed hollow rubber ball (of various sizes) with a hard rubber handle. This handle is a loop into which the finger fits comfortably and permits of placing or removal with facility. Its presence gives no discomfort. By removal every night proper drainage and relief of pressure occur, and it is found that little douching is required. Mechanically it appears that the ball will remain wherever a pessary can be used at all and will hold up more structures than any other device. It is a simple thing and not fearsome to the patient and has been in use now years enough to have had a good test.

## NOTE ON DETERMINATION OF PATENCY OF FALLOPIAN TUBES BY THE USE OF SKIARGAN (COLLARGOLUM) AND X-RAY SHADOW.

**William H. Cary, M.D.,**
Brooklyn-New York.

IN studying the problem of sterility, I am, in certain cases, attempting to demonstrate the patency of the Fallopian tubes by X-ray examination of the distribution of Skiargan after injection through the uterus and tubes. The principle is simple. If the tube be patent the shadow extends throughout its length and irregularly into the lateral pelvis. The obstructed tube shows a shortened shadow.

Mrs. B. entered Brooklyn Hospital for operation January 5th of this year. Indication for operation was recent continuous pelvic pain. Two years ago I did a Webster-Baldy shortening of the round ligaments for retroversion. Examination on admission showed uterus movable and in position. There was tenderness in each fornix. No mass was palpable. Patient neurotic and fearful of pregnancy. For the purpose of demonstration, 10 c.cm. of Skiargan was injected through the cervix while the patient was under anesthetic before laparotomy. When the abdomen was opened, the silver solution was seen exuding from the right tube. There was no flow through the left tube. As a part of the operative procedure the left tube was removed. Although when freed from adhesions it seemed normal, careful examination showed it to be occluded one-half inch from the uterine end. The Skiargan had extended to this point. The patient made a prompt and comfortable convalesence.

In taking up the question of sterility in the individual case we can seldom feel that our diagnosis is accurate or any prognosis warranted because of our inability to determine if the tubes are unobstructed. An occasional case presents a history of tubal infection with signs of diseased adnexa so evident that a temporary unfavorable prognosis is warranted. Other frank lesions may be present which prevent fertility. More frequently, however, we are consulted by the patient who has no reason to suspect pelvic disease and in whom we find no gross lesion. In these cases a careful detailed history, including an inquiry regarding sexual hygiene and compatability is indispensable. The routine study includes an examination of the vaginal and cervical secretions. We must note whether the cervical canal is obstructed by tenacious mucous or angulation, or if the secretion is destructive to the spermatozoa because of infection. Does the history indicate a condition of the endometrium unfavorable to pregnancy? Our data are only half complete without a detailed microscopical examination of the semen, which involves an estimation of the relative number of spermatozoa and the relative degree and length of activity and also the percentage of deformed and immature cells.

These questions I have discussed in a previous paper. (*Internat. Jnl. of Surg.*, May, 1912, p. 140.)

If in this large group of cases of sterility we can now bring to bear definite knowledge regarding the patency of the tubes, the most important single factor is determinable so far as the woman is concerned. An intelligent prognosis may be given. In this matter one draws attention to the frequency with which, when operating, we find clubbed tubes in the absence of any definite history of salpingitis. No doubt a proportion of our seventy per cent. of failures in treating sterility is due to this condition. With the patency or blockade of the tubes known we may avoid useless local treatment and operations on the uterine cavity or canal. The indications for artificial impregnation or conservative operation by laparotomy may be more clearly defined and the probable importance of minor abnormalities determined.

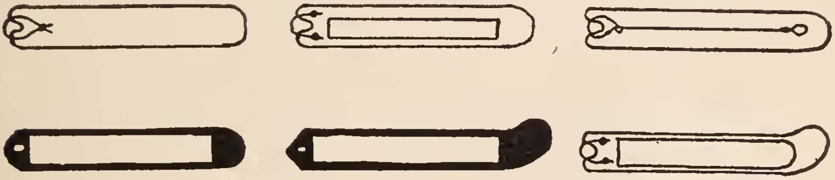
To carry out this method the patient must be in the dorsal position upon the plate with the apparatus in position to take the picture immediately after the injection of the Skiargan. A speculum and tenaculum to expose and steady the cervix are required. For injection, the Skene glass intra-uterine instillation tube with the Dickinson modification of the curve is used. The rubber bulb should have a capacity of 10 ccm. Two sizes may be at hand. The internal os must be passed but it is to be snugly fitted by the tube. After sterilization of the instruments, the cervix is exposed and wiped with iodine. The silver solution is then slowly injected after entrance of the pipette directly into the body of the uterus. The cavity of the uterus holds 8 minims as a rule. (Veit's Handbuch—Endometritis.) If uterine colic occurs, one waits. After injection the picture is made.

This procedure will not be safe if infection in any form exists. It is therefore contra-indicated if the history indicates a recent pelvic inflammation. Theoretically it will be unsafe indefinitely in those cases where we wish to note the condition of the tubes after post-abortal infection. After three months of freedom from acute gonorrhœal inflammation of the class of cases where the colon bacillus, typhoid, or other simple catarrahal inflammations have occurred we do not expect reaction. (Bacteriology of Periuterine Suppurations. Hartman and Marx V. Gaz. Med. de Paris 1, 9 No. 12 Mch. '94.) Cases with very little or no history of pelvic disease are our hardest problems and in this group the method is applicable. Retrodisplacement of the uterus, prolapse of the adnexa or both may cloud the picture. This may be corrected by reposition and insertion of a pessary before the injection is made. Whether the silver salts thus used have any desired therapeutic action we are not ready to state. I hope to make a more complete study with report of cases later.

Dr. Julius T. Rose presented notes on "Large silver stem pessary as substitute for glass intra-uterine stem. Glass stem found broken in the uterus."

Dr. Rose:—I operated on a patient last June in Brooklyn Hospital for dysmenorrhœa and sterility and inserted an ordinary glass stem, held in by silver wire and small lead shot. I examined her when she went home at the end of two weeks, and again a few days later. Both examinations showed stem in good position and unbroken, but the shot had been pulled beneath the mucous membrane. Two days later, on examination, I found that the eye of the stem had broken off, leaving a very jagged prominence at one edge which rested on the posterior vaginal wall. Fortunately no damage had been done, but the possibility of harm presents itself at once from such a condition. Why it should have broken I do not know. It is often broken at the time of insertion by the passage of the wire or needle. I thought I might get some form of stem made to prevent the eye from breaking at the time of insertion or later, and for this purpose I had a platinum loop placed in the glass stem where the silver suture went through. Then the idea came up that possibly a metal stem might be made instead of glass, thus avoiding any chance of breakage. I found that Dr. Dickinson had used the hollow sterling silver stem. I made up some metal stems which you will notice look like pure silver, but are only a cheap metal silver plated. I should like to have criticism as to their weight and size, and what objection might be made to the plating; is it as reliable as a sterling silver stem? The stems are first made of solid metal, formed and polished. Then the end is sawed off that has the eye and a hole bored out leaving a thin light shell closed at the rounded end. Then the cap containing the eye is cemented on, and the hollow metal stem is heavily silver plated. A very unfortunate thing also occurred in this case. I used perforated shot clamped on to hold the silver wire at the back and front of the cervix, and the shot became imbedded in the cervix beneath the mucous membrane. The broken stem came out readily, but I could not get hold of the shot either front or back. I finally succeeding in getting the one in front out from under the mucous membrance, but I could not get the silver wire out because traction caused so much pain, so I had to give the patient gas to remove it. I then had some flat pieces of lead made to use in the form of a bar. (Diagrams) These can be readily made of any length or weight desired, and when clamped on to the silver wire will hold without being buried beneath the mucous membrane. I have noticed in the cervix that there is often up near the internal os either a false passage or a valve-like piece of membrane which obstructs the entrance of the stem. The stem I have made to overcome that obstruction has a tip like the end of a Coude catheter, so that if it starts to go into the false passage it can be turned in the canal and the tip will then slide by the obstruction. A straight stem would hardly enable one to change the direction, but with the oblique tip, one is able to turn the point in the proper direction. This oblique tip is good also because it corresponds more nearly to the curve of the posterior wall of the uterus and is less likely to cause dangerous pressure.

Dr. Rose illustrated the style of stems by diagrams on the board.



**Wire loop for eye in glass stem, solid or hollow. Wire clear through glass stem.**

**Hollow metal stem. Silver plated.** **Hollow metal stem. Oblique tip. Silver plated.** **Hollow glass stem. Oblique tip.**

Dr. Baldwin:—Glass stems will break sometimes. I once had one break and it was hard to remove it. It was then that I had the eye made by bending over the drawnout end of the stem, and none has broken since. As to criticism of the silver stems; they seem to be too heavy. The other are lighter and patients will carry them for months. I think the lead plates are too long and will undoubtedly cut into the cervical tissue if they are allowed to remain any length of time.

Dr. Dickinson:—I have experience with silver stems, which were made of pure silver hammered out and hollow. They are lighter than glass. The great new thing in Dr. Baldwin's stem is the absence of pressure on the vaginal wall, they are intra-uterine, and those hidden within the uterus are best. If two wires are used why not four. Stems are so valuable that we must keep trying, but with the knowledge that they must not stick out of the uterus and rest upon the vaginal wall. All of these ideas must be given a trial by Brooklyn physicians as they originated here.

Dr. Judd:—Dr. Bonner suggested the use of ordinary buttons for the wire to pass through in holding in the stem, which seems better than the lead plates.

Dr. Taylor:—Lead buttons, made something like a collar button are made for this purpose, and are illustrated in all catalogues.

Dr. Pomeroy:—I might merely mention the fact that in imitation of Dr. Baldwin's button I put a stem in a patient early this week and instead of using a button I used a ten cent piece and I am waiting to see if it makes a satisfactory retainer.

Dr. Cary:—I have had experience with two cases of broken stems; one of the cases my own and one of Dr. Dickinson's. One patient came with the stem protruding from the cervix, and I was very much surprised to find that the eye had been broken and the stem had remained and was protruding. It was easily removed. The other was broken diagonally at the eye. The patient had no knowledge of its occurrence. In that case there was a sharp edge which had imbedded itself in the posterior wall of the cervix, and I had trouble to locate the buried point. By a screwing motion I was able to raise the stem into position and then with forceps succeeded in removing it. In one of these cases I had placed the stem with a silk wound gut suture and in the other Dr. Dickinson operated, using a large wire loop.

Dr. Holden:—In the event of a cracked stem it seems as though it must have been cracked at the time of introduction. If perfect after it has been sutured in position it should remain so.

Dr. MacNamara:—Dr. Cary's paper interested me very much as I am greatly interested in the study of the internal organs by the X-ray method. I do not know how any picture could be taken of the tubes which would not be interfered with by the pubes and pelvic bones. It is working in a very useful direction.

Dr. Rose:—The reason why I was trying to get something different from the solid hammered silver was the matter of cost. Silver plate on an inexpensive metal is all right, and I cannot see a difference between the silver plated stem and the solid silver stem, and it is a question of two and one-half to three dollars for one and twenty-five cents for the other, and that is an element of practical importance.

## CANCER CASES OF THE YEAR, WITH EXHIBIT OF CAUTERY OUTFIT.

Victor L. Zimmerman, M.D.,
Brooklyn-New York.

THE number of cases of cancer treated in the year's service in the Gynecological Department of the Brooklyn Hospital was not large for a service of 16 beds. In all only 20 cases appear, with the large proportion originating in the cervix uteri.

16 occurred in the cervix uteri.
2 " " " fundus "
1 " " " ovary primarily.
1 " " " bladder.

The case of carcinoma of the bladder was so far advanced that it was inoperable.

The patient with carcinoma of the ovary showed the rapidity with which this disease advances when attacking these organs. A well nourished woman of forty-two years had complained only a few weeks of abdominal distress, when she entered another hospital and was operated upon by the writer. There was found extensive carcinoma of both tubes and ovaries, and a large mass of new growth in the omentum. There was no involvement of the stomach. She recovered rapidly from the operation. In two months she presented herself at the Brooklyn Hospital Dispensary with extensive metastases in the liver and intestines, and new formations in the remaining pelvic structures.

The two cases of cancer of the body of the uterus were treated by abdominal pan-hysterectomy with wide dissection of the broad ligaments.

The cases of cervical cancer were variously treated. Only one could properly be classed as an incipient case. This woman had a small ulcerated growth on the anterior lip of the cervix, the nature of which was only definitely determined after removal of the uterus. The vaginal hysterectomy after the method of Goffe was done, as she had a troublesome cystocele.

One case of cervical involvement was complicated by ovarian cyst, and the uterus was entirely removed by abdomen.

One case of secondary operation for advanced disease of the cervix in a negro woman was complicated by a submucous fibroid of the fundus, the size of a hen's egg; this was removed per vaginam by myomectomy with the cautery knife, without great difficulty and no severe hemorrhage.

All the other cases of malignant disease of the cervix were submitted to some form of cautery operation. Two were started as Byrne operations, but this procedure was abandoned in favor of the two-suture vaginal hysterectomy, not on account of any technical difficulty, but because the disease was found to have invaded the tissues of the body of the uterus.

One case of disease of the cervix seemed to be confined to the tissues of the portio vaginalis, although there was a growth the size of a walnut on the anterior lip, and some retraction of the tissues about the cervix. It was considered promising enough, however, to subject it to the typical Byrne operation. This was carried out, the cervix and the greater part of the body of the uterus being removed by high amputation with the cautery. An interesting development in this case was the occurrence of a rather brisk hemorrhage on the ninth day, severe enough to require a vaginal pack. This occurred on the day of the expected catamenia. This accident is usually due to faulty technic, the amputation being done too hurriedly, or with a knife too hot. A late hemorrhage also may be caused by a too early removal of the vaginal pack, the eschar being prematurely separated, resulting in the opening of a vessel.

Upon one other patient a modified Byrne operation was done, but it was not considered promising for this procedure on account of the large mass of cauliflower growth present, and the amount of vaginal involvement. I mention these two cases particularly in order to emphasize the difference between the Byrne operation proper, and the method by which the far advanced cases of cancer of the cervix were treated, viz., by thorough curettage and cauterization. The operation devised by Dr. Byrne is the high amputation of the cervix by means of the cautery, and is applicable only to cases of cancer confined to that portion of the uterus. It is claimed by its author to be curative in this condition. Unfortunately it is frequently confounded with curettage and cautery burning, as a palliative measure in advanced disease.

Regardless of the nature of the operation or the progress of the disease, these patients were submitted to X-ray after treatment whenever possible.

On the whole, a consideration of these few cases of cancer is discouraging; only one of our cases was an incipient one, and she presented herself seeking relief not for a new growth, but for a moderate amount of prolapse, and cancer was discovered accidentally. Malignant disease of the generative organs of the female is not seen early on account of the hidden and inaccessible position of the organs, the confounding of early symptoms with the false notions of menopause conditions, and the natural reticence of women to bring their sexual organs under the scrutiny of the physician. Surface cancer is more quickly recognizable by the patient, and more easily curable by the surgeon. From our reading during the past few months, both in the medical and lay press, one would think that we would be led to the most optimistic conclusions regarding the cancer situation. If the public is not being educated at the present moment as to the seriousness of malignant disease, then we can hardly hope for more enlightenment; for the press is congested with cancer discussion. There is certainly hope for more light in the near future along the lines of radium treatment; but does not all this furore in the public prints about new lines of treatment tend to give the incipient sufferer a false sense of security, and tempt him to put off until too late, his one best chance, which is still an early recourse to surgery? It occurs to me that what the public stands most in need, is enlightenment on the necessity of early recognition, and not so much public discussion of the methods of treatment of this widespread disease.

## ABORTION, WITH PERFORATION OF THE UTERUS, AND DEATH FROM PULMONARY EMBOLISM.

William Sidney Smith, M.D.,
Brooklyn-New York.

I WISH to present for your consideration this specimen of a perforated uterus.

The history of the case is as follows: Mrs. H. was a strong Polish woman of twenty-eight years, multipara, presumably about three months pregnant. She was seriously ill when admitted to the gynecological service of the Brooklyn Hospital at 10 P. M., November 9, 1913. Information was obtained through an interpreter that on November 9th the patient was well enough to get up. Later in the morning there was vomiting and abdominal pain. The physician who attended her reported over the telephone that he had first seen the patient on the 9th at 2 P. M. She was flowing profusely at that time and had been doing so for three or four hours. On vaginal examination he found placental tissue in the cervix. Another physician was called and chloroform was administered at 6 P. M. Quoting the Doctor's words: "I removed the placental tissue in the cervix and another inside the womb with placental forceps. I used a dull curet. The curette went right through a hole in the uterus on the right side into the abdomen. I didn't do any more. I did not give a douche and there was no bleeding at the curetting."

On admission to the hospital the patient was conscious, the lips were cyanotic and the face was dusky. The expression was anxious. Respirations were regular, 50 to the minute. There were neither the air-hunger symptoms of hemorrhage nor the clammy pallor of shock. The skin was warm except on the face. Rectal temperature was 104, pulse 130, small and regular, the cystolic pressure was 85. Blood examination; Hb 60 per cent., 13,600 whites, 84m polymorphonuclear cells.

On examination the abdomen was soft and concave, there was no dullness and no special point of tenderness. The vagina contained a small quantity of blood. The cervix was rather rigid and admitted one finger. The uterus was upright, moderately enlarged with definite outline and not very tender. There was no bulge to the cul-de-sac. At 12.30 the patient was pulseless and she died at 2 A. M. with all the symptoms of suffocation.

The post-mortem findings are as follows: The uterus measured 4½ inches in length by 3 inches in width. The body at the thickest part measured ¾ of an inch while the wall of the fundus near the point of rupture was but ⅛ of an inch in thickness. The tissue at the fundus was very friable, so much so that the weight of a small pair of scissors was sufficient to penetrate the wall. On section there was an area of pus in the right anterior wall, culture from which showed streptococci. There were two perforations in the fundus, one large enough to admit the thumb, the other smaller. There was no roughening of the peritoneum. The bowels were moderately distended and in normal position.

There were two spots of ecchymosis on the lesser bowel and a slightly indurated crescentic ecchymotic spot on the mesentery which might have been due to a seizure with a clamp. There was 15 ozs. of fluid blood in the peritoneal cavity after removal of the uterus. The pelvic peritoneum was smooth and not deeply injected. The right pleural cavity showed many adhesions. The right lung contained a dark hemorrhagic area in the posterior two-thirds which, on section was moist, showing no air bubbles, and resembled the cut section of an infarct. Left pleural cavity, no adhesions. Left lung, emphysematous, otherwise normal. Heart, slightly enlarged. Kidneys, congested. Liver, very friable. Spleen, very dark on cut section.

Dr. Chase:—It was my privilege to see Dr. Byrne's work at different times and the perfection of his technique was my admiration. When he got through, the operation was done "brown," and the results he reported have been unsurpassed and probably never equalled. It was a favorite view of Dr. Byrne and some of the other workers in this field, that in addition to the heat there was a peculiar effect and value in the electric current. Having used both the electric and paquelin cautery, I have never been able to prove my superiority of his methods over the paquelin cautery. The thermic cautery is coming more into use and its value more generally accepted. It is not used as frequently as it should be by the profession. I have had occasion to remark before that general surgeons practically ignore the thermo cautery in cancer. It is a broad question, but I think that those who follow Dr. Byrne's methods will have success not inferior to those involving the wide dissection with the possibilities of causing secondary infection. I have been using radium for some years and have alternated its use with the thermo-cautery. My conclusion in cases that are past cure by operative interference is that the combined effect brings better results than the use of either alone. I do not know whether larger doses of radium will accomplish more than the small doses or not.

Dr. Judd:—I had a case of perforation similar to the one reported by Dr. Smith, where the placenta forceps passed through the uterine wall and grasped the intestine. In this case we were more fortunate as the condition was recognized immediately and we did an abdominal section and several inches of intestine were resected, the open in the uterus was closed and the patient recovered.

Dr. McNamara asked how long from the time or perforation did the patient live.

Dr. Smith:—We cannot tell exactly when the placenta forceps were used, but it was about eight hours. It is a question how to account for the amount of destruction of the tissue in the fundus, and the presence of the streptococcus.

Dr. Beach:—Regarding the thinness of the uterine fundus we are apt to forget the erosive action of the chorionic villi.

Dr. McNamara:—It is an important matter as to the liability of the surgeon when a perforation of the uterus occurs. If he uses perfect asepsis, and perfect technique and if the uterus is diseased to my mind he is not culpable.

Dr. Shann asked if Dr. Zimmerman had followed up the sixteen cases and what had become of them, and what were the recurrences and results.

Dr. Zimmerman:—It is rather early to say anything about recurrences in these cases. There were no primary operative deaths.

Dr. Chase asked if any of the physicians knew of any death occurring from the thermo-cautery operation which could be attributed to the operation. Dr. Byrne stated that there were no primary mortalities.

Dr. Humpstone:—One point in the line of treatment in perforations of the uterus. The whole question is one of infection or of injury to the bowel. I know of three cases where there was perforation by Goodale dilators where there was nothing found in the abdomen. Mere perforation is not a necessity for opening the abdomen, and if infection has occurred I cannot see how the operation is going to do any good.

Dr. Westbrook spoke of a case which had happened in the experience of a former Brooklyn physician. This physician was assisting a colleague in a curettage of a woman who had been several months pregnant. Suddenly he pulled something down from the uterus and not recognizing it he pulled some more and then cut off some. He then recognized that it was intestine. Hastily he jammed the ends back into the uterus and left expecting the woman to die. She did not die. She discharged fecal matter through the uterus for a considerable time and recovered. There was evidently a spontaneous anastamosis.

Dr. Holden said that the last case on which the Byrne operation was performed at the Long Island College Hospital, Dr. Polak followed out the suggestion of Percy and opened the abdominal cavity as a preliminary step in the procedure, and by having one of his assistants holding a hand on the uterus he was able to indicate the extent and direction in which the cauterization should be done. It is considered a great aid to the operator.

Dr. Pomeroy read a paper entitled: "A Unified Obstetrical-Gynecological Service. Organization and definition of duties; relation between services and between hospital and dispensary; interchange of personnel the first of each year."

Dr. Pomeroy:—During the past two years we have practically finished the evolution at the Brooklyn Hospital of a unified gynecological and obstetrical service which appears to have some unique features. The fundamental principles have been accepted and many details have been worked out past the experimental stage, so that a brief statement as to some of the working details may be of interest to all of you who are engaged in the special lines of practice involved. It has been fairly well recognized, by some of us at least, that institutional obstetrics as distinguished from haphazzard and hampered home midwifery is distinctly a surgical field, and that efforts to favorably modify the course and consequences of pregnancy require a high order of surgical technique and surgical judgment.

The science and art of obstetrics is no longer a fag and feeder for general medical practice, but occupies a major position in any argument for the persistence of gynecology as a specialty at all. Except dentistry and some of the surgery of the eye obstetrics is the only branch of surgery that the general surgeon will not undertake. The gynecologist of the past delt largely with reconstructing wrecks of ignorant or meddlesome midwifery. The women specialist of today must be able and willing to care for pregnancy, delivery and complications incidental thereto, as well as for the pelvic and abdominal surgery of the non-pregnant woman. We maintain that the gynecologist must be a competent surgical obstetrician, and the obstetrician must be a competent gynecological surgeon. The entire field must be covered and each individual gynecological aspirant should have balanced skill and judgment in dealing with all types of cases involving the pelvic and generative organs of women.

This general statement covers the principles upon which the changes in the plans have been made. Originally the gynecological and obstetrical divisions were independent, the gynecological was under Dr. Dickinson and his position is that of an independent worker today. The association of the two divisions has enabled us to maintain without conflict the principle mentioned above. It is accepted that there are two classes of cases in our division, those referred by the attending gynecological staff, and those that are referred from the office of the hospital and are taken in from the outside. There has been no conflict between the gynecological and general services. The only way in which it was found necessary to establish a rule to avoid confusion was in the management of obstetrical cases that involved major medical conditions, such as typhoid cases, and those with surgical complications involving obstetrical condition, as broken legs. When a miscarriage occurs it remains in the division to which it was originally assigned. During the last two years we have arranged for a consolidation of the two divisions of obstetrics and gynecology with emphasis on the proposition of which I have given an outlined statement. The obstetrician must be competent to do gynecological operations and the gynecologist must be able to do the work of the trained obstetrician. Dr. Dickinson, Dr. Hussey and myself, are the physicians in charge of the combined departments. The principal of the arrangement is that Dr. Dickinson is dean of the faculty on continued service as gynecologist and obstetrician. He has no service, but has the courtesy of the general wards, and for whatever particular matters he may take special interest in, reviewing or carrying on experimental work as he wishes. This depends on the good will of Dr. Hussey and myself who are exchanging on the service. Dr. Dickinson by courtesy of the actual visiting staff takes the whole service during a limited time in the year, and this may be said to depend on personal courtesy. We hold that it maintains a permanent atmosphere that is wholly satisfactory. In the arrangement of our time Dr. Hussey and Dr. Pomeroy act on continuous service on the staff side of the hospital on which they began the year. Dr. Hussey is now visiting obstetrician and Dr. Pomeroy gynecologist. On the first of next January we reverse the positions. Dr. Hussey, Dr. Zimmerman and Dr. Rose follow on their side of the house. The actual effect is felt on the private cases as well as on the general ward cases. In the ward work where there is in existence a distinct gynecological division and a distinct obstetrical division there is almost always more or less confusion as to what cases belong to each; should a Cesarian section or an extopic go to one or the other. This arrangement enables us to make a classification that is logical and not in competition. The logic of the proposition is further carried out by the fact that the house obstetrician and house gynecologist is the same person, and there is no confusion as to the rights of one or the other, and no possibility that a patient having a hemorrhage may lack attention because of a confusion of rights or a discussion as to whose case it is. We have made an agreement as to the most logical program for the hospital records, and that is that the obstetrical division shall be responsible for all cases in which a diagnosis of pregnancy can be established. When cases come in in which the diagnosis is not positively established it becomes a simple case for inspection. Some cases come in without label through the office and pass the actual inspection of the interne. If they are abortion cases, or ectopic, the obstetrical division is responsible and there is no possible confusion. If a situation arises, as occurred last week, where a woman had been trying to induce abortion and who had been to Kings County and sent home after a diagnosis of tumor was made, and was referred to us for ovarian cyst, and when I examined I found that she had been mauling herself, we can easily place her where she belongs and it results in no jealousies. If a patient lands on the gynecological side who requires the obstetrician it can easily be transmitted to the obstetrical side. It must ultimately bring an obstetrical service that is concerned with pregnancy at any stage. In order to make it still further cover this division it must include all normal cases of more than four weeks, post-partum cases, and primary injuries that have not made a good repair, which will remain in the obstetrical ward. The obstetrician who has been raised as a side branch will not recognize this for its makes him responsible for work that is ordinarily done on the other service. The obstetrician must be a gynecologist, and vice versa.

## CHARACTER AND SIZE OF THE SERVICE; GENERAL SCOPE OF THE WORK; ALLOTMENT OF STUDIES AND RESEARCH.

A. A. Hussey, M.D.,

Brooklyn-New York.

TO me has been assigned the task of assembling, attractively arraying and parading for your critical inspection, a set of figures that may be assumed to represent the quantity, quality and characteristic features of the work of our department. As the figures are essentially female, it has occurred to me that, if I follow the prevailing styles and clothe them lightly, revealing an outline here and there, I may hold your attention for my allotted space of time.

First, as to the size of the service. Approximately thirty beds, half obstetrical, half gynecological, with access to private wards and rooms, give us facilities for treating two cases a day, one obstetrical and one gynecological. The cases that come under our care are not different in character to those of other hospital services of similar kind. The essential difference between the services of two hospitals lies in the attitude of mind in which the attendants approach their work. And if there be any point of interest in reviewing the work of a service like ours, it is in attempting to show the way in which we meet some of the problems common to all.

A hospital is primarily a place for treatment of the sick. It becomes secondarily, through the amount of clinical material at hand, the careful collection of statistics and the facilities for the study of the pathology of disease, both before and after death, a place for investigation of the causation of obscure conditions and experimentation along new lines of treatment. Therefore our review may take cognizance of studies on the way as well as of work done. In the comparison of experience and viewpoints, in the exchange of ideas on the still unsolved problems of our work, lies the value of a meeting like tonight's.

In the obstetrical service one-third of the cases are operative and two-thirds deliver themselves in a normal way and are taken care of by the established routine of the department. The proportion of cases that will present problems of interest to the attendant depends somewhat upon his attitude toward obstetrics in general. I think that I may safely say that our attitude toward obstetric problems is essentially surgical. While we admit that women may and do give birth successfully without the aid of any of the refinements of modern surgery, we feel that it is only by approaching obstetrics from a surgical standpoint that the greatest measure of success can be attained. Asepsis carried out in all its detail at all stages of the treatment, the establishment of prophylactic measures against imminent complications or injuries, prompt and fearless interference in all emergencies, these are the fundamental principles from which we believe our best results are obtained.

As our horizon is enlarged by observations and study, we find, year by year, that many of our old methods must be discarded, and we accept as rational plans of treatment which we would formerly have regarded as insanely radical. For example, during the past two years, in a series of 625 cases we have found indications for twenty-three caesarean sections, against twelve high forcep operations. My only regret in quoting these figures is in the necessity for the use of the high forceps even twelve times. But we claim for the mother first consideration, and when she comes to us with an unborn baby whose life is already jeopardized or extinct, we do not deliver her by caesarean section unless there is no other way. In this series none of the mothers were lost; but the fetal mortality for the forceps was 66 per cent. against 4 per cent. for the caesareans; and in this fact is found a reason why the ratio between forceps and caesarean section has been reversed during the past few years.

The indications for which we operated in this series were as follows: labor obstructed by contracted pelvis ten cases, by fibroids two cases, by ovarian cyst one case; three cases of placenta previa in primipara at or near term; two cases of eclampsia and one case where convulsions were threatened; two cases of high contraction ring; one case of heart disease with broken compensation; and one old primipara with ruptured membranes, an undilated cervix and an unengaged head in the posterior position.

Toward eclampsia our attitude has not changed materially. While we have treated eighteen cases in the two years under consideration with one maternal and four fetal deaths, we take no credit to ourselves for this low mortality. The treatment of eclampsia is still a problem with us. When shall we use drugs? When shall we deliver? And how? As long as we do not know the etiology of eclampsia, our treatment must be essentially eliminative. Therefore we eliminate the pregnancy, in most cases, in the quickest and easiest way. The only thing that we feel sure about is that the only satisfactory treatment for eclampsia is prevention, and we carry our prophylaxis even as far as emptying the uterus when convulsions are threatened, and emptying it by caesarean section if necessary.

It may be of interest to note the way in which the cases of eclampsia in this series were delivered. In nine cases the operation chosen was vaginal hysterotomy, in three caesarean section, in one forceps. Five cases delivered themselves without operative assistance.

Placenta previa, so far as the mother is concerned, has ceased to present any interesting questions of treatment. Past experience has demonstrated that this complication can be treated by bags or by Braxton-Hicks version with a very low maternal mortality. These plans of treatment, especially the latter, take little cognizance of the interest of the baby. Lately this aspect of the subject has been dwelt upon with the view of making placenta previa an indication for caesarean section. We recognize the right of the baby to live, if it is viable, and on this ground we have done three ceasarean operations during the past two years. But a maternal death rate of three per centum in a series of sixty-seven cases treated since the opening of the low maternity, and an unbroken series of forty-five cases without the death of any mothers give us little reason to adopt radical measures unless it can be definitely shown that a very material gain is to be expected for the babies without loss to the mothers. The fact that so many of these babies are poorly developed and frequently die shortly after birth, when delivered alive, leads us to doubt if this can be accomplished. The eighteen cases in the series under review gave a mortality of eleven per cent for the babies.

The problem of heart disease in pregnancy and parturition has not escaped our attention. Three badly crippled hearts have come under our care. In one case, caesarean section was done in the ninth month under morphine-hyoscine anesthesia. A rapid delivery, without worry, pain or shock to the patient, and with little exertion or anxiety for the operator, resulted in a smooth convalescence for mother and baby. The second case was allowed to go into labor with the idea of interference in the second stage. She died suddenly before help could be given. A third, also, was permitted to go as far as she could in labor, protected by morphine narcosis, and, by breach extraction, was delivered with a narrow escape from death. Thirty-three per cent. mortality for three cases! Fifty per cent. mortality for the cases that went into labor! There are times when apparent radicalism is really conservatism. We think that more heart cases should be delivered without labor. But enough of this obstetric stuff. It is old and dry. The only interesting thing that I have to report tonight is the inauguration of Pomeroy's Prophylactic Parturition or the Prevention of Prolapse by Perineotomy. Some of you have heard of it, and those, who haven't, will. You know what the prolonged perineal stage does to the perineum. At any rate the gynecologist can tell you, for it makes a very good living for him. I am sure, that in practicing this proceedure Pomeroy follows the Biblical injunction, "let not thy left hand know what thy right hand doeth," else his obstetrical hand and his gynecological hand would be at war. For we prophesy that when every one takes up the practice of prophylactic perineotomy, the days of the gynecologist will be numbered.

We have done thirty-two perineotomies during the two years, and it is most satisfactory to note how much it facilitates delivery, and how easily the resulting wound is repaired, even when an over-enthusiastic interne cuts too deeply and goes through the sphincter. This may occur but it causes no anxiety to the operator nor bad result to the patient, if it is repaired at once.

Another study that Pomeroy has started is the management of occiput posterior positions. We have all learned from sad experience to dread this complication in primiparae. But Pomeroy has brought relief to a bad situation by the simple device of turning the occiput to the opposite anterior position. And it works. Even that cold blooded critic, the interne, admits that there may be something in it.

We have performed this maneuver twenty-one times during the year, and we estimate that we have saved at least one hundred hours of hard labor. If you don't believe that it is worth while, ask the first primipara in labor that you see what she thinks about it.

We have among us a surgical conscience that is uneasy in the presence of pus. As nature abhors a vacuum, so Dickinson hates a suppurating wound. Even that time honored and supposedly inoffensive slough, the umbilical stump, has not escaped his wrath. In the attempt to eradicate this ancient sore of the body infantile, we have tried excision of the stump, close ligature of the cord, and now we are experimenting with compression clips. Not yet are we prepared to express an opinion on the relative merits of these methods. However, Dr. Dickinson is still at work on the subject, and, as the house-obstetrician says to the nurse-in-charge, when he sticks the points of the clip into the skin about the cord, "You will hear from this later."

You may wonder why we call our service gynecological-obstetrical. It would seem like placing the cart before the horse, did not one know about artificial impregnation and the stem treatment of sterility, as practiced by Dickinson, Cary and Rose. To be sure, the obstetrical department has not been flooded yet with cases as a result of this work. But we have hopes. I find records of the use of glass and silver stems in twenty-five cases during the past two years, and, according to Smith, the statistician on stems for sterility, we may expect results in about 33 per cent. of the cases.

Pelvic outlet repair, the bread and butter of the gynecologist, is always a question of interest. Dr. Bishop keeps tabs on our results, and we make it a point to be pleasant to him, hoping to cajole him into taking a lenient view of some of our failures. About a hundred cases of repair have been done during the two years, in as close imitation of Dickinson as the technical limitations of the operators would permit. We are strong for the approximation of muscle and facia in this work, and we have had excellent results with continuous buried and subcuticular sutures.

The proportion of vaginal operations is on the increase. In addition to the usual number of repairs, amputations of the cervix, interpositions, etc., I find recorded for the past year thirty vaginal hysterectomies. Thirteen of these were done for prolapse, eight for cancer, with six more where malignancy was suspected, and three for fibroids. In the cancer cases the cautery was used as much as possible. In most of the operations where ligatures are used, we like the continuous loop of the gut, one for each broad ligament. The smooth convalescence which follows vaginal hysterectomy encourages us to operate by the pelvic route whenever it is possible.

Our list of abdominal hysterectomies for 1913 consists of forty cases, twenty-four for fibroids, thirteen for adnexal disease, and three for cancer, and one under suspicion of malignancy. In comparing the lists of vaginal and abdominal hysterectomies, it will be seen that we find that cancer is best attacked from below in the majority of cases as they come to us in hospital work, and fibroids from above.

During the past two years ninety-five operations have been done for retroversion. Forty-five, or over fifty per cent of these were Websters. There were fifteen suspensions, five fixations, one Gilliam, three Mann, and six Coffey operations.

But I will not weary you further with statistics. I fear that I, even as the makers of fashions, have erred in dressing by figures too scantily, and have allowed you to be surfeited with much detail. My purpose was to give you merely a glimpse of the work and study that is going on in the department. The limitations of my time and your patience have been reached. What I have failed to tell you, you will learn later, as the studies under way are completed.

# THE DISPENSARY SERVICE OF THE DEPARTMENT IN NEW QUARTERS, ITS WORKING OUTFIT, ARRANGEMENTS FOR PRIVACY AND EXPEDITION.

**Eliot Bishop, M.D.,**

Brooklyn-New York.

TWELVE years ago next month I first began Out Patient Department work and with the exception of two years internship, I have been constantly at it, working in ten different institutions, and you will pardon what I believe to be justifiable pride when I say that none is so well equipped or so well organized to stimulate scientific observation as the Herriman Dispensary of the Brooklyn Hospital. Not, however, that we have no faults, but the longer we work there the more obvious they become, and we are constantly attempting to eradicate them.

My duty tonight is simply to describe the building, or at least our division of the building, and our care of the patients there and I feel that it will be most practically done if you will follow with me a patient through her visit. When she presents herself, which she may do from 12.30 to 2.00 P. M., the civil statistics are taken at the door and with her permanent ticket she presents herself at the benches outside the door of the Gynecological room on the second floor at the north end. The only other division whose waiting patients are here is the Pediatric and as the children are almost without exception accompanied by mothers this gives the patients the partial seclusion of only women and children as associates while they wait their turn for treatment. Over the door of the division is an illuminated sign, "Diseases of Women." The new patient then comes in and seats herself besides one of the two history desks, each desk being separated from the other by a partition screen, making two stalls each, having sufficient room for the desk and two chairs. By this arrangement the patient is always in full view of passing attendants and because of no isolation there is not the slightest chance of complaint or attempted blackmail from any of these patients and yet she has all the privacy needed, in that her history is heard only by the historian. The history is taken on a card a sample of which I present for inspection. Formerly we had a larger sheet in an envelope which was schematically the same but was of the same size as the history sheets used in the hospital and was kept on the ward with the patient; an ideal system it seems to me and the reason for the change I'll leave for the "man higher up."

The history being taken the patient sits where she is until a nurse appears, and she appears because she is through with the preceding patient and has room for this patient. I have given these simple details to show how automatically this process works. When the patient is taken under the care of the nurse she is first shown the closet where the bladder and bowels, if possible, are emptied. With this in our own division and leading off our private hall there is no delay. The patient then goes to the treatment room, in each corner of which is a novel yet simple dressing room of folding walls which are equipped with bolts again insuring the patient privacy while she removes her corsets, a procedure insisted on in new patients and usually with revisiting patients. She is then placed on one of our new tables with tilting top and with a slight elevation of the pelvis for inspection and bi-manual examination. When draped properly the nurse presses a buzzer which tells the physician that the patient is ready. If other positions are desired they are conveniently obtained on the easily operated tables. Two of these rooms are equipped with wall cabinets for the use of electro cautery, headlight or cystoscope, which we have frequent recourse to.

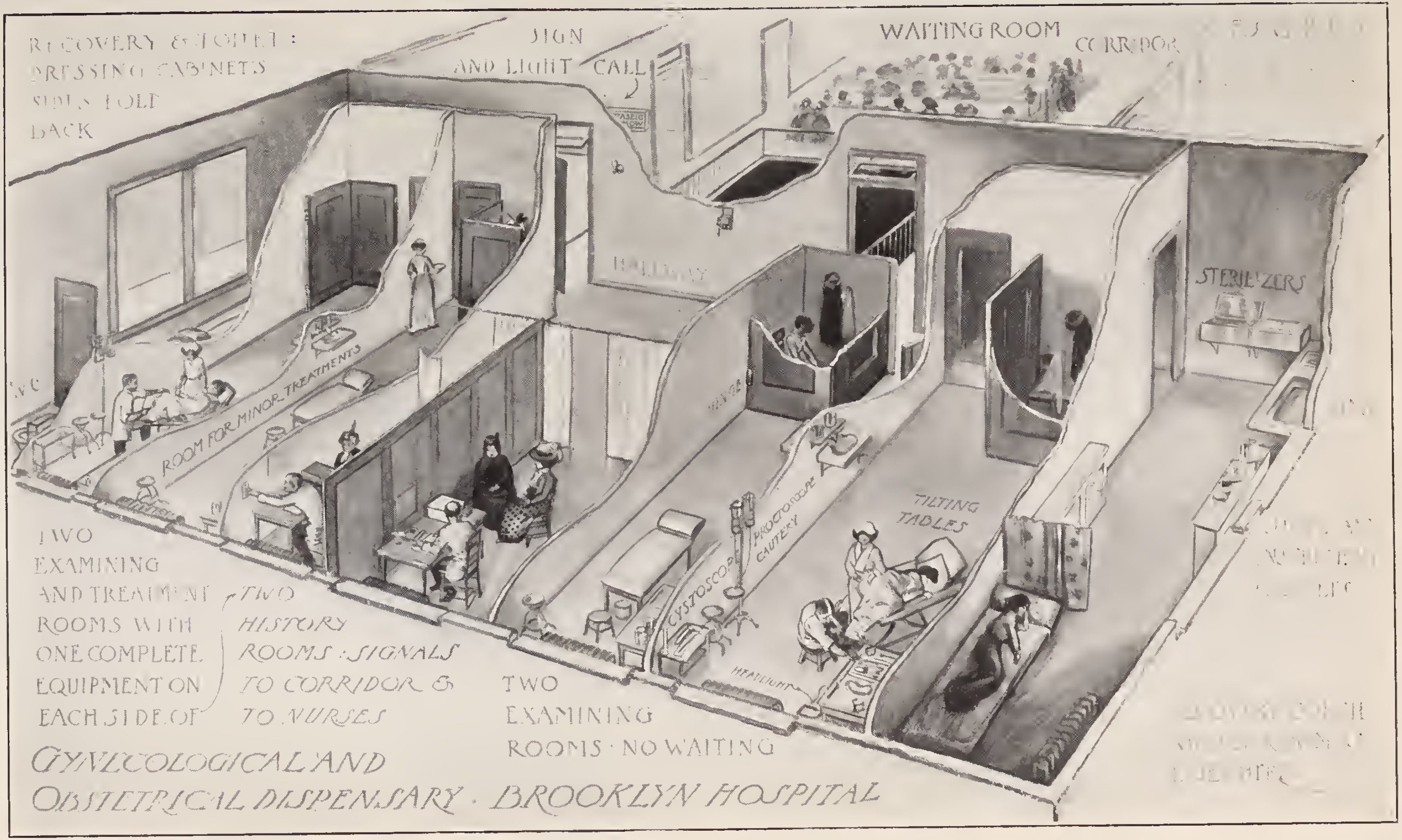
Instruments are sterilized in the nurses' supply room, put into a shallow basin with dilute phenol and are removed in a pus basin after use, never going back into the phenol until having passed through the sterilizer. The pus basins are sterilized each time and instruments may go back into the patient from the basin with perfect safety. Treatment completed, the physician leaves the room, the nurse assists the patient off the table into the small dressing room. The nurse then takes the instruments into the supply room and after bringing them back and placing them in the phenol solution waits to usher out the patient and is ready for the next comer. The patient resumes her seat at the history desk, gets her instructions and passes out.

If after treatment the patient has pain, or lassitude, or perhaps syncope, she may go to the patients' retiring room in which is a clean, yet comfortable rattan couch. The room at the other end of the private hall is the supply room where instruments and apparatus are kept. Each of the treatment rooms has a wash stand, a stool and two glass tables. On one of these is kept the instruments, medicines, tampons, sponges, etc., the other a bowl of liquor cresolis compositus which we use on our hands for two reasons; it it an excellent antiseptic and a fairly good lubricant. The objection to the persistent odor does not stand because we always wear gloves which are used and treated in the following manner. They are boiled, dried and powdered at the end of the day and put away with a powder puff.

On arriving on duty we don aprons and then our dry gloves and wash our gloves with soap and water and liquor cresolis compositus before and after each examination and we feel that we have produced a sufficient degree of safety for each patient and ourselves.

With our complete equipment, an active and obliging laboratory for diagnosis and with a series of cases averaging forty to fifty new cases a month we feel that we have opportunity and if we do not utilize it the fault is ours.

Our chief complaint is not with the dispensary but with the


RECOVERY & TOILET: DRESSING CABINETS SIDES FOLD BACK
SIGN AND LIGHT CALL
WAITING ROOM
CORRIDOR
W.C.
HALLWAY
STERILIZERS
ROOM FOR MINOR TREATMENTS
CYSTOSCOPE
PROCTOSCOPE
CAUTERY
TILTING TABLES
HEADLIGHT
TWO EXAMINING AND TREATMENT ROOMS WITH ONE COMPLETE EQUIPMENT ON EACH SIDE OF
TWO HISTORY ROOMS: SIGNALS TO CORRIDOR & TO NURSES
TWO EXAMINING ROOMS · NO WAITING
GYNECOLOGICAL AND OBSTETRICAL DISPENSARY · BROOKLYN HOSPITAL

Diagrams of unified gynecological-obstetrical department.

system and we fear that such a clean, attractive and comfortable building attracts many patients who are not objects of charity, but how that can be corrected is not my topic. I cannot close without saying that I hope some time my dream of years will come true, the Out Patient Department for pay patients.

# THE CENTER-BOLSTER SKIN-EDGE STITCH, ITS VISIBLE AND SPLINTED WOUND AND SIGHTLY SCAR.

**Robert L. Dickinson, M.D.,**
Brooklyn-New York.

ALL the purposes and virtues of a stay or tension suture, together with avoidance of defacement of the skin by stitch scars will be served by the use of an ordinary test tube or a roll of gauze laid as a single lengthwise bolster above the wound. Round it each silkworm stitch completely circles, its crossing point beneath the tube being just as the stitch emerges from the wound at the cut margin of the skin. In this way the healing process is in view throughout its entire course without the necessity of pulling the dressings from the wound itself, and both a longitudinal and a lateral splinting and relative immobilization are effected.

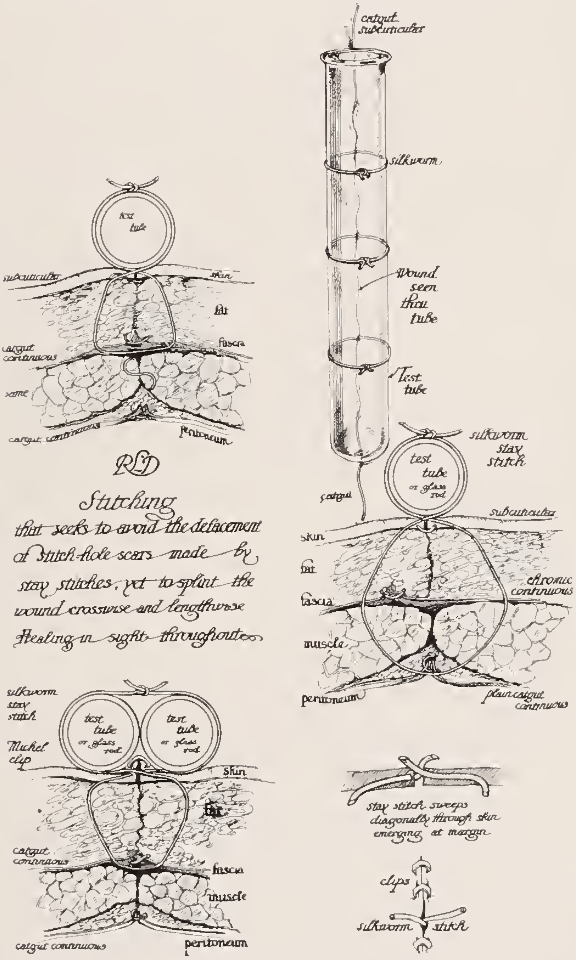
If it were feasible to do away with every possibility of infecting wound edges, and if one could protect them from all rough usage during laparotomy, and if post-operative stress and strain on the wound by severe vomiting, or distension, or oozing between its layers were entirely avoidable, tier suture with catgut would furnish the ideal method and meet all indications. Until such guarantee is possible a certain percentage of failures of primary union and of yielding scars will occur. To lower this percentage is our study and endeavor. Just as we are now perfecting details of technic in operation in order to save the hundredth man, so should we strive to save from gaping the hundredth fascia, or the twentieth, or whatever our hernial average may be. No clinic and no closure can claim entire freedom from hernia.

We may trust to buried catgut the muscle separation of an interval appendectomy; or the short rectus split; or the transverse crescentic incision for a simple cyst or round ligament shortening or sterilization. It is otherwise in patients with lowered resistance or with attenuated abdominal walls; in the very obese; in the case of big incisions; and after operations where the edges of the laparotomy well have been dragged upon and rubbed upon long and hard. In the latter group the catgut tier may well be braced. Indeed, by reason of the brace a lighter catgut can be used to lessen irritation and diminish the bulk of foreign body to be absorbed. Under such conditions general and even pressure may and does prevent oozing and do away with dead space. And by the added longitudinal bracing the wound is immobilized in two directions.

As to sightliness of result it will hardly be denied that a comely scar is better than one punctured with a double line of cross bars or stitch hole marks. But surgeons are curiously indifferent to these durable defacements and are apt to believe that when scars are hidden they do not produce mental uneasiness and repulsions.

As for visibility; at any time the entire length of the wound may be inspected without detaching dressings which conduces to more frequent observations, while, at the same time, the patient is relieved of the dread of being hurt; and no blood coagulates beneath the tube but only along its outer line of contact with the skin, where it forms a seal. The dressings are singularly clean. If, instead of a tube, a strip of gauze is employed, it is readily rolled to one side to allow inspection beneath.

Any form of suture may be used. A sweep, comprising all layers, emerging at the skin edge and there crossing to circle the tube, placed with a Reverdin; or catgut layer suture of peritoneum, muscle, and fascia and a fine catgut subcuticular of the skin, with a few stay sutures of silkworm, about one to the inch; or the Fowler double figure eight, catching peritoneum in the first circle, fascia in the second, fat and skin edge in the third, the tube or gauze roll in the fourth (in very fat women). The first method is speediest, the second most accurate. I place silkworm through-and-through stitches an inch apart, then take 20 inches of No. 1 plain gut on a needle



Stay stitches that leave no stitch-hole scar, the test tube or roll of gauze being used as a bolster and a slanting grip of the skin edges taken.

long enough to do away with a needle holder. The last two peritoneal sweeps are close together to make fast. The same stitch follows back gently in long loops on the edges of the recti, and once more returns to adjust a previously cleared quarter-inch roll of fascia, such clearance having been made when the fascia was sewed. The skin suture is catgut subcuticular. The stay sutures must not be tied too tight.

The application of this principle to stay sutures for curved or crooked wounds on any part of the body, however rounded, is available by the use of the gauze roll. This has a big field in breast amputation after which repulsive scars are the rule—yet unnecessary. Surgeons think too little of the impression produced by the defacement, particularly in this region. In hare lip work the principle of the skin edge stitch is applicable.

# THE ORGANIZATION AND WORKING OF A UNIFIED GYNECOLOGICAL-OBSTETRICAL DEPARTMENT AT BROOKLYN HOSPITAL.

**Robert L. Dickinson, M.D.,**

Brooklyn-New York.

DR. DICKINSON'S part of the programme consisted in a fully illustrated outline of a series of studies which was under way in the gynecological-obstetrical service of Brooklyn Hospital which bore on technical efficiency and elimination of waste in the operating room.

## A UNITED GYNECOLOGICAL-OBSTETRICAL SERVICE

Senior Gynecologist and Obstetrician, Dr. Dickinson.

### Hospital.

| *Gynecology.* | *Obstetrics.* |
|---|---|
| Visiting Gynecologist, Dr. Pomeroy | Visiting Obstetrician, Dr. Hussey |
| Associate Visiting Gynecologist, Dr. Cary | Associate Visiting Obstetrician, Dr. Zimmerman |
| Clinical Assistants, Dr. Smith, Dr. Bishop | Clinical Assistants, Dr. Rose, Dr. —— |

### Dispensary.

| | | | |
|---|---|---|---|
| Senior Attending | Dr. Cary | Senior Attending | Dr. Rose |
| Attending | Dr. Smith | Attending | Dr. Morgenthaler |
| Attending | Dr. Bishop | Attending | Dr. Buell |

Resident in Hospital—One house officer for the gynecological and obstetrical work (may visit Dispensary also).

Below Senior the *entire hospital staff transfers bodily* from Gynecology to Obstetrics and vice versa each January 1st.

The Associate Gynecologist or Obstetrician acts as first Assistant at operations the first month of each three and that is when a new Resident comes to our service. In grave operations and private cases the Associate also assists. Otherwise the Resident is first Assistant in Operating Room. In summer, Associate acts as Visiting, and Clinical assistants as Associates. Dispensary service is combined Gynecology and Obstetrical work; this staff, after making good, being attached to Visiting service.

## STUDIES BY STAFF OF GYNECOLOGICAL AND OBSTETRICAL SERVICES WITH CO-OPERATION OF ALL MEMBERS.

| Subject. | Assigned To. |
|---|---|
| Pelvic Floor: Studies with buried and sub-surface sutures, | Drs. Dickinson and Bishop |
| Perineotomies | Dr. Pomeroy |
| Buttock strap with all perineal operation | Dr. Cary |
| Repair of old lacerations at subsequent labor | Dr. Hussey |
| Report of our results of perineorrhaphies, old and new, and literature | Dr. Bishop |
| Prolapse: Report on cases and methods, and literature | Dr. Bishop |
| Laparotomy Wound: Illumination and dark coverings; shield-retractor; methods of closure; test-tube stitch, | Drs. Dickinson and Rose |
| Review results in all surgical services; suppurations; literature, | Dr. Rose |
| Post-operative exudates | Dr. Cary |
| Hysterectomies: Summaries and reports, and follow-up; two-stitch method | Drs. Smith and Dickinson |
| Cancer: Byrne operation | Dr. Zimmerman |
| Anteflexion and stem operations | Dr. Smith |
| Sterility studies | Dr. Cary |
| Posterior parametritis | Dr. Cary |
| Amputation of Cord: Clip of cord; culture infections | Dr. Dickinson |
| Occipito-posterior-rotary-version | Dr. Pomeroy |

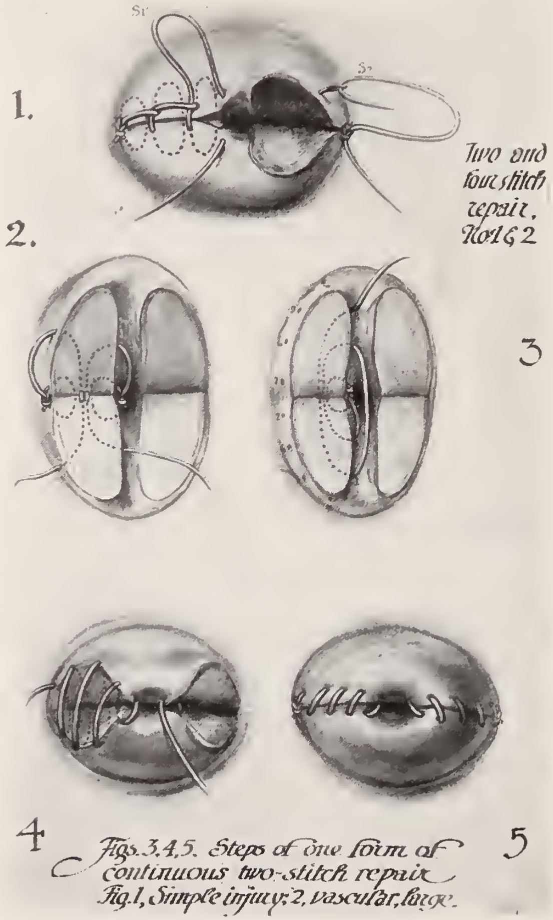
*Illumination.* Attention was drawn to the fact that in the operating room it would seem as though the attempt was made to illuminate brilliantly the surroundings of the wound rather than the depths of dark red caverns. The more brilliant the general illumination, with light colored surroundings, the less the eye will see into caverns whose general color is dark red. A study was being made to avoid the glare on white sheets and towels encircling the field so that any searching into the cavity would not have its purpose defeated by a contracted pupil. Because the black sheets, gowns, and gloves of Carrel have a depressing effect and other colors fade, red rubber fortified with fabric has been selected.

*Shield retractor.* A subject on which notes have been taken for some years, in several countries, was the protection of the edges of the abdominal incision from friction while the operator is at work within the abdominal cavity. Objections were stated to thin rubber that drags about, to pervious fabrics that soak through at once, and to oiled muslin, which, cracking, soaks through within a short time. A shield retractor was shown. This was of rubber fabric with a horseshoe spring to act within the peritoneum when in position, and one on the apron that lies on the spring.

*Trachelorrhaphy.* To simplify the usual cervix operation a single suture on each side of a bilateral injury was demonstrated, used as a continuous suture. This method applies also to amputation of the cervix and does away with the tangle of interweaving hanging lines which call for the bother of unraveling to tie. In general the experience of the service is that as good results are obtained from the continuous suture as from the interrupted.

The new matter presented here tonight is the use of the continuous suture in the repair of the cervix or its amputation. We have tried the methods here depicted. A simple buttonhole stitch, one for each side (Fig. 1). This is quicker than interrupted sutures and does well for all smaller and simpler work. In its results it is fully as good as the interrupted or the two layer.

A second trial was of the two sutures on each side, one started at the cervico-vaginal angle (Fig. 2), one at the internal-os-angle of the denudation, so to speak, the tie occurring at the external os angle on each side.


1.
2.
3
4
5
Two and four stitch repair, No1 & 2
Figs. 3, 4, 5. Steps of one form of continuous two-stitch repair
Fig. 1, Simple injury; 2, vascular, large.

FIGS. 1, 2, 3, 4, 5—Various forms of continuous suture as applied to cervix repair. These may be submucous in location.

A third series showed two layers on each side, the outer either a continuous (Fig. 4) or a submucous (Fig. 6). One is shown as a single strand (Fig. 6), one in two strands (Fig. 2). This method takes twice as long as the first described and twice as long as the old plan of the interrupted stitches. The start is made in the internal os (Fig. 3) at the angle on the edge of the canal, runs up the canal to the external os, then back along the vaginal aspect of the cervix to the cervico-vaginal junction (Figs. 3, 4, 5). The surface work is either exposed as a plain continuous or buttonhole stitch or hidden as a submucous (Fig. 6). The one advantage of the submucous is the few points of scar tissue in which, later, Nabothian cysts may form. It seems to be a frill hardly worth while except in amputations. In all subsurface work the knot, if any, should be buried. The material must not be larger than 0 or 1 chromic gut.

The swiftest, simplest amputation is done with two stitches beginning amidships with one above and one below (Fig. 7). One then sweeps to the right, the other to the left either as a single layer (Fig. 7), or in two layers, the second layer being submucous.

*Perineorrhaphy.* In repairing injuries to the pelvic floor immediately after delivery buried catgut with subsurface stitch as finish has been tried in sixty cases. It has proved safe, there being only one partial breakdown and rarely a slight skin gap. Two or three buried number one chromic interrupted stitches have at times been used, but for the most part continuous layer suture has been the method. The writer thought that with the perineum, as with the cervix, the first sweep of the suture might well be placed in the deepest part of the wound; when one tie has been made to anchor the suture its two ends go on in any convenient fashion to whip over and over—one end for the deeper structures, one for the more superficial—and the two ends are finally brought together to be tied. In any case such lines are hidden beneath the skin, and sometimes beneath the mucous membrane.

Stress was laid on one bit of technic. The knot must be buried. The only mild suppuration, and in one track which has been seen, backed in from the knot on the surface. The end need not be tied if it is swung through the tissues in looped fashion, returning on itself. To learn this trick the incision in the abdominal wall is the best place for practice.

*Hysterectomy.* Removal of the uterus by the procedure of Simpson and modifications of his method have seemed to abbreviate and simplify these operations and have been used by the service for the last two years. The double strand of fine plain or chromic gut number 0 or number 1 acts as ligature, and suture, and tractor and clamps are needed only on the reflux circulation. Care must be taken to tie and anchor the first sweep securely on ovarian artery, utero-ovarian artery or round ligament as the case may be. Another tie may be made anywhere along the course of the work and the strand continue on. In the first trials care is needed and a ligature may be used, for this method is not for the inexpert. The main suture-ligature that works its way down the broad ligament becomes the suture that closes in the coned stump of the cervix and the tip of the vaginal ring, and it also makes fast the round ligament into the stump. Finally, one of the strands serves to close over the peritoneum. The work is lifted into view and drawn open handily by these taut lines.

*Vaginal Hysterectomy.* Dr. Dickinson had applied this principle to vaginal hysterectomy with marked satisfaction, and the service had done some twenty vaginal hysterectomies in two years in this fashion.

After the bladder is pushed back and the cul-de-sac opened and the base of the broad ligament seized, cervix and stitch are pulled in different directions and a cut made between. This, or a second loop and cut, takes us close to the uterine artery. This sweep bites into tissue to anchor it and then circles the artery, is looped and carefully nestled home, and kept taut by the assistant. Rarely a second, or locking loop, is applied. Next the opposite side is treated in the same way. Now the uterus comes down so that the anterior peri-

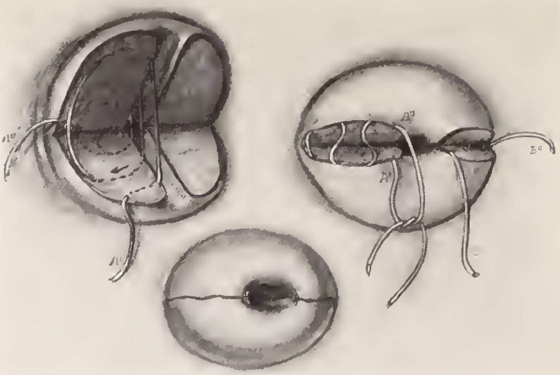


FIG 6—Cervix repair, two layer submucous.

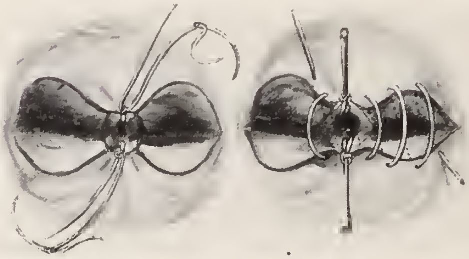


FIG. 7—Amputation of the cervix by two continuous sutures, the start being made in the center line.

toneal pouch is accessible for opening and widening. The fundus is drawn out. The suture either takes two more bites, round ligament in one and tube and ovarian ligament in the other before one side of the uterus is cut free, or else a clamp is applied, and after the uterus is out these stitches are taken. One must be careful to puncture and grip good tissue to prevent slipping,—for example, in the ovarian ligament. The upper end is now tied, shortening the broad ligament. The suture is not cut, however. The opposite side is treated in the same fashion. Care must be taken that in the jump between the ligating loops, safeguarding the lower portion of the broad ligament and those controlling the ovarian and round ligament vessels, there be no slack or span. The stitch should now be tied, and then continued to sew broad ligaments together, make fast the bladder and close the vaginal incisions.

Dr. Dickinson drew attention to the need of study even of generally accepted procedures. If the efficiency engineer, by motion study and time study has been able to double the output of other skilled handicraftsmen the same gain should be possible at the operating table. As an example, attention was drawn to the fact that none of the leading German operators take their eyes off the field, reaching out a hand or calling for the next instrument. Thus the eye does not have to find a tool and then re-focus on the exact point selected for seizure or suture. Again, Dr. Simpson avoids looking away from his work because each instrument repeatedly used lies in its own place and there he finds it and there his hand replaces it. These were given as instances of team training and hand training applied to accepted and standardized everyday procedures.

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## ARTIFICIAL FEEDING OF INFANTS. A SYMPOSIUM.

### TOP MILK ADAPTATIONS IN INFANT FEEDING.*

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IN the artificial feeding of infants, top milk adaptations will hold precedence over other methods in general practice because they are simple, efficient and inexpensive.

Other methods have their place, each having its advocates and enjoying a period of ascendancy. But for every day general use, top milk adaptations are most practical.

Provided always that the same amount of top milk is taken from the quart after the same period of standing, the effect upon the infant's nutrition may be accurately observed and adaptations easily made to meet changing conditions.

To obtain top milk for infant feeding, a quart of milk should stand undisturbed for five hours at a temperature of from 40 to 50 degrees F. and the quantity required removed by siphonage or a cream dipper. To work with top milk it is absolutely necessary to know a few percentages. In average milk, the top sixteen ounces contain 7 per cent of fat, 3 per cent plus of sugar and 3 per cent plus of total proteid. When a higher percentage of fat is desirable, the top ten ounces may be removed and they contain an average of 10 per cent of fat. With these two percentages clearly in mind, it is possible to work with the average case with reasonable certainty of success.

Knowing the fat content, one may for the time disregard the proteid element, diluting the top milk to the extent of obtaining a suitable percentage of fat content and adding sugar to the diluent in the proportions of 5 per cent if plain water is used and 3 per cent if a cereal diluent is added. The percentage of sugar is based upon the amount of the diluent and not upon the whole mixture because the top milk has its sugar content. The attempt to be too exacting in the adaptation of milk to infant feeding has led to much confusion and a clear perception of the general adaptability of the two mentioned top milk percentages will do much to aid the general practitioner.

Infant feeding is a bone of contention even among pediatricians; and when these disagree how can the general practitioner intelligently prescribe? At the expense of being considered a little less scientific we should assist by being more practical and bring at least partial success out of the present chaos.

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*Read before the Brooklyn Pediatric Society, November 25, 1914.

When we seek a diluent for top-milk adaptations there are several that might be chosen but I shall consider only the most practical.

Whey, if properly prepared is an ideal diluent but in its selection consideration must be given to the possibility of its perfect production.

The following details must be rigidly observed if its value as a diluent is to be maintained.

(*a*) While the curd is forming the mixture must not be disturbed.

(*b*) After the curd has formed it must be broken up as gently as possible.

Disregard of either of these details will result in a liberation of the fat content to an uncertain quantity and will result in inaccuracy in the adaptation of the formula.

(*c*) The action of the rennet or curdling ferment must be destroyed before the whey is used as a diluent.

(*d*) The lactalbumin must not be coagulated.

To destroy the action of the ferment, the whey must be heated. However, at a temperature of 160 degrees F. coagulation of the lactalbumin takes place. This must be avoided and a temperature of 150 to 155 will destroy the ferment without the coagulation. Whey thus made approximates very closely and consistently to 1 per cent of fat, and this should be counted upon in the adaptation of the formula.

The objections to whey as a diluent are the difficulties of its proper preparation and its expense, either or both of which may be reasonable objections to its use in many instances.

Water with the addition of citrate of soda in proper proportion is an excellent diluent and perhaps is the most serviceable because the most practical. The theory of the action of the soda is uncertain, like most theories, but clinically the fact remains that its addition makes the milk curd more digestible. The usual proportion is one grain to each ounce of milk used. The objection to the soda is its slight constipating effect, although this may also prove desirable.

Plain water as a routine diluent has much in its favor with none of the objections of expense, preparation and prejudice that many other diluents have.

Lime water is not a necessary diluent although commonly considered so. When milk is perfectly digested there is nothing gained by the addition of lime water. In some instances it seems to act by reducing the firmness of the curd and assisting thereby the digestion, but this action is slight. The belief that it adds to bone formation or reduces in any particular the tendency towards rickets is absolutely without foundation. Lime water is neither a preventive or a corrective of any rachitic manifestation.

Cereal diluents are to be considered by another in this symposium and for that reason I pass them by.

The term "modified milk" is a good one to abandon; as used at present modified milk means the manipulation of cow's milk in numberless ways many of which violate the principles originally involved. It seems to make little difference what is done to the milk; mere dilution with water, regulation of any one or all of its elements, the addition of cream, sugar, lime water, citrate of soda, bicarbonate of soda or any other abstraction or addition; it is all modified milk.

This adds to the confusion of the medical profession as well as the laity.

The aim of modification is to approximate cow's milk to human milk. It cannot be done. It is impossible to modify milk from the cow to make a fluid identical with human milk. We may bring the proportion of the solids as closely as possible to the human product and yet there will always remain a difference in the chemical composition of the proteids, the fats and the carbohydrates and it is this chemical difference that seems most active in many infants.

I am convinced that in this aim we are wrong; the aim of modification should not be toward a human standard but to the need of the particular infant under observation. The infant should not be fitted to an arbitrary modification because of his age or his apparent caloric need but the food should be adapted to his requirement at the time and in every case this is an individual problem.

With any adaptation there are some common symptoms that are indicative of the need of further adjustment; these principally are as follows: Vomiting, regurgitation and colic usually accompany overfeeding and as acute dilitation is readily produced the vomiting becomes persistent and habitual and the infant does not gain.

Vomiting of curdled milk and mucus with a rancid odor occurs when the fat content is too high.

Diarrhea with straining and watery, green stools indicates that the fat content is too high. Vomiting quickly supervenes and at times fat globules may be detected in the stool or vomitus with a low power lens.

Colic indicates that the whole mixture is too strong.

Constipation and retarded gain in weight indicates too low fat content, too weak food or too little quantity.

Curds in the stool accompanied with flatulence are common with too high proteid, but this is not always so. A languid anemic infant with flabby musculature usually requires more proteid and it is peculiar that in such infants curds may persist in the stool until the proteid deficiency is corrected, when they disappear. Such curds are chiefly albumin due to the abnormality of the relative proportion of fat and proteid or are insoluable curds allowed to form by the uncombined acid in the stomach. An excess of free acid is common when the proteids are low.

Failure to gain in weight or strength but with comfortable digestion is suggestive of a deficiency in both fat and proteid.

Sour, watery eructations may be dependent upon an excess of sugar or fat.

A word in regard to increase in weight.

Weight requires to be interpreted with care and discretion. The single factor of weight is at the present time so overestimated as indicative of the infant's development that it requires more than passing mention.

It must be clear that percentage increases are more important than absolute increases. Also that there are considerable daily variations which in the infant of six months often amount to six ounces which represents the fall between the evening and the morning weights. This difference is largely accounted for by the loss of water from the lungs and skin and the evacuation of urine not being counterbalanced by the food taken through the night. Other factors are the presence of food in the stomach, urine in the bladder and feces in the rectum and the difference in weight when these are full may be as much as ten to twelve ounces over that when they are empty.

Increase in weight may represent only fat deposit which may in itself be beneficial or harmful. Weight is a valuable guide to the infant's nutrition, but as a single factor it is commonly overestimated. We aim for symmetrical development, not mere increase in weight. Pediatricians commonly observe infants who have apparently thrived upon a poorly selected food for a considerable period; infants who have gained *suspiciously* in weight but who within a few weeks exhibit unmistakable evidences of rickets or of scorbutus.

Weight must always be considered in its association with comfortable digestion, adequate muscular tone, physical activity and mental vigor.

In closing I wish to speak of the personnel of infant feeding. Grievous faults which are not attributable to the food selected or the manner of the feeding are commonly traceable to the personnel which directs the process. Compared with most of his other duties, the duty of infant feeding is an inglorious affair with many physicians and in the absence of adequate and definite instructions backed by sufficient enthusiasm to see that its details are carried out, the kindly disposed but officious neighbor, a self-sufficient nursery maid, or in some instances the mother herself, undertakes the adaptation of the food on her own initiative. But while taking the initiative, she does not release the physician from the responsibility when later the infant suffers.

It is an excellent habit to think of "adapted" milk even when we speak of "modified" milk; our aim must be adaptation, not merely modification.

There is a science and an art of infant feeding; heretofore we have made too much of the science and too little of the art. Important as it is to be alive to all that science can teach us, in infant feeding the personal factor is a strong one and each infant is a law unto itself. Infant feeding is an individual problem dependent in a large measure upon the personnel which directs the feeding.

## WHOLE MILK AND SUGAR SOLUTION FEEDING.*

John W. Parrish, M.D.,

Brooklyn-New York.

WHOLE milk feeding was arrived at in the process of evolution away from the rich-in-fat top milks as we gradually learned the relative unimportance of protein and the great importance of fat as a cause of indigestion.

As the caloric value of an ounce from the top ten of the bottle is roughly 37½ and that of an ounce from the top sixteen is about 30, while that of an ounce of whole milk is little over 20, it is obvious that to get a given nutritive value a much larger quantity of whole milk than of top milk is required. So, as between top milk and whole milk feeding, the question is, can we get a more easily digested and assimilated food and one equally nutritious by increasing the proteid percentage at the expense of decreasing the fat percentage? And the answer is, in my opinion, we can in many instances. One advantage then of this method is that many infants will more readily digest a weak whole milk mixture than a weak top milk mixture, and once they have acquired this faculty we may, without causing indigestion, gradually increase the proportion of milk up to the point where sufficient fat is taken. The other merit of this plan is that because of its good digestion the baby, while not necessarily fat, is apt to be strong, is unlikely to have rickets and is not unduly susceptible to the various infections.

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* Read before the Brooklyn Pediatric Society, November 25, 1914.

Naturally it is in connection with the low fat percentage that the disadvantage of the method appears, viz., in some cases it is impossible to increase the strength of the food rapidly enough to properly nourish the child without bringing on indigestion. On this account I believe that after the child has been on a whole milk mixture for some weeks or months it is often advisable to use one of the weak top milks, the top twenty-four ounces or the top twenty ounces and so increase the fat more rapidly than the protein.

The sugar solution in whole-milk feeding makes up a smaller part of the entire food than it does in top-milk feeding and so is rather less likely to cause irritation of the mucous membrane with indigestion and diarrhœa. However, if this effect is produced a cereal water should be added in place of sterile water, and that without much regard for the infant's age. I find little difference in the digestive capacity of infants for milk sugar and detrin-maltose provided a cereal is given with neither.

*Method of Giving the Food.*—In a very young infant we might begin with 1 part whole milk and 4 parts 5 per cent milk sugar solution in which is included 5 per cent of lime water. At the end of a week if the food is being well digested and the baby is not satisfied we may change to 1 part whole milk and 3 parts 6 per cent sugar solution with lime water as before. Thereafter, being guided by the state of digestion, appetite and weight, we may substitute about every third, fourth or fifth day an ounce of milk for an ounce of sugar solution. It is important to avoid any sudden large increase in the proportion of milk for it is likely to cause indigestion and may compel us to go back to the beginning again. In any case occasional vomiting may occur, and if it does happen we give at the feeding time following the vomiting sterile water instead of the food. If the vomiting keeps recurring we may try daily lavage for a time and if that does not stop the trouble another method of feeding should be tried.

In my experience the best cases for this whole milk method are: First, infants with good or reasonably good digestion, such as are being put on the bottle because the mother's milk has given out. Most of these do well. Second, a group seen often in private practice where the mother, the nurse and perhaps the doctor have tried so hard to get a fat baby that they have brought on fat indigestion. The infant is sour-smelling from frequent spitting up; occasionally it vomits a large amount. The stools are pale, sour-smelling, incline to be dry and often look greasy. And worst of all, or perhaps best of all, for it is what makes the parents willing to give up the top milk, the baby has colic and keeps them awake much of the night. If we carefully explain why a change is necessary and that the baby won't gain at first but very likely will lose weight, and also cry a good deal for a couple of days, we may achieve a brilliant result with whole milk.

After an acute gastro-enteritis this method may be useful, beginning with one-eighth whole milk, though often it is better to give a fat-free milk for a short time before commencing with whole milk. In chronic catarrhal gastro-enteritis with stationary or falling weight whole milk may be satisfactory, but here again it may be well to give fat-free milk at first and for a longer time than in the acute cases. Infants not likely to do well on whole milk are those with long continued gastric indigestion with vomiting, and infants who are both feeble and very young.

On the whole I should say that whole milk with sugar solution has a distinct but somewhat limited sphere of usefulness which sphere may be greatly enlarged by the substitution in some cases of a decoction of cereal in place of sterile water.

## SPLIT PROTEIN IN INFANT FEEDING.*

E. H. Bartley, M.D.,

Brooklyn-New York.

AT the December meeting of this Society, 1899, I had the honor to read a paper on "Some Points in the Chemistry of Cow's Milk with a Description of a Method for Home Modification of Cow's Milk" (*Brooklyn Med Jr.*, May, 1900), in which I described a method of adjusting the protein of cow's milk to accord more nearly with the proteins of human milk. This method has since become known as the "split protein" method. Westcott (*International Clinics, Tenth Series,* 1900), White and Ladd (*Phil. Med. Jr.,* 1901), and others have since advocated this method.

At the time when I first described the method the idea of pediatrists generally was that the casein of cow's milk is the chief difficulty the infant has in digesting it. Since that time we have come to the notion that it is the fat rather than the casein which gives the most trouble.

The object of the process was to so change the relative proportions of the albumin and casein as to give a smaller amount and softer curd with the coagulation in the stomach of the child. I demonstrated at the time the finer curd produced by cream and whey mixtures and their similarity in behavior with human milk.

The process then described and demonstrated before the society was as follows:

Siphon off from a bottle of well creamed milk three-fourths of its contents, leaving the cream undisturbed. To the milk thus drawn off, add one drachm of a good essence of pepsin and warm slowly in the inner vessel of a double boiler or oatmeal boiler. When the milk begins to curdle, begin to stir with continued heating until the curd gathers together into a tough, plastic mass, which will occur at about a temperature of 150 deg. F. To make sure that the rennet is killed, heat to about 155 deg. F. Remove the vessel from the source of heat and strain through a clean wire coffee strainer. Dissolve the necessary sugar in the whey, cool and pour back into the bottle, mix with the cream and add water to make up to the original volume of the milk. The mixture will then contain nearly the same amount of fat as the original milk. It will contain about 0.8 per cent of casein and about 0.83 per cent of albumin and whey protein. It will contain about 4.5 per cent of sugar before adding any sugar and 0.6 per cent of inorganic salts. If we wish to increase the casein in the mixture we draw off less bottom milk leaving more in the bottle.

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*Read before the Brooklyn Pediatric Society, November 25, 1914.

To diminish the fat in the mixture without increasing the casein we draw off less bottom milk, and obtain part of the necessary whey from another bottle of milk. It will be necessary to discard a part of the top-milk left in the bottle, using such part of it as we desire.

In adding sugar we remember that one rounded tablespoon of milk sugar or one level tablespoon of granulated sugar adds to a quart of food 1.5 per cent of sugar.

If we desire to still further increase the albumin in the food, we may add white of an absolutely fresh egg. The white of one egg will add 0.3 per cent of albumin to a quart of food. Unless the egg is known to be fresh it is best to omit its use.

After an extended experience with this food I am still convinced that when it is well borne it gives most excellent results in the nutrition and development of the baby. Judging the results by the growth, increase of weight and time of the eruption of the teeth, I know of no better food. It will not agree with every infant nor will any other artificial food; but with a little skill on the part of the physician it will usually give good results. There are few mothers who find it too complicated.

## MALT SOUP FEEDING.*

**Walter D. Ludlum, M.D.,**

Brooklyn-New York.

IT is to be noted that this paper was prepared to occupy a space of ten minutes in a Symposium; hence some of its limitations.

For an intelligent understanding or systematic presentation of the principles of Malt Soup Feeding, the chemistry of the carbohydrates must be clearly in mind. For this reason two or three minutes of the few granted us had best be devoted to this well known subject. The carbohydrates used in infant feeding are (1) starch, which is a poly-saccharide with the formula ($C_6 H_{10} O_5$); (2) the di-saccharides with the formula ($C_{12} H_{22} O_{11}$), three in number, saccharose, lactose and maltose, and (3) the mono-saccharides with the formula ($C_6 H_{12} O_6$), dextrose, lævulose and galactose.

In the process of digestion, the starch, through an intermediary product, dextrine, of which there are several, is converted by the action of the diastasic ferment into maltose, this being a reaction by hydration. This is what takes place in the digestive tract and it may be, and under certain conditions is, performed outside the body. The di-saccharides, also by hydration, are converted into mono-saccharides; a molecule of saccharose being changed into one of dextrose and one of lævulose, lactose into dextrose plus galactose and maltose into two molecules of dextrose. The carbohydrates are utilized almost entirely in the form of dextrose.

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*Read before the Brooklyn Pediatric Society, November 25, 1914.

Malt Soup Stock as sold, is a thick liquid of specific gravity about 1033, containing about 70 per cent of solids, mostly (57%) maltose and the remainder (12.4%) dextrine, with the addition of potassium carbonate. In its preparation for infant feeding it is always used, by us at least, as originally recommended, in conjunction with starch. The printed directions as to quantities are naturally disregarded and we prepare our formulæ according to our judgment in the individual case.

We have then two forms of carbohydrates or three, if we count dextrine as a separate form, in our finished formula. The virtue of the maltose resides in the fact that after conversion its product is all dextrose, directly utilizable, by reason of which it is, physiologically speaking, economical. The addition of starch seems to be not merely casual but very important as a corrigent; the maltose is directly absorbed, starch must go through the double process of hydration and splitting and is therefore much more slowly absorbed, giving a continuous supply to the system. Regardless of the practical difficulties of securing a pure maltose, when used it has regularly caused undue intestinal irritation and diarrhea, which is, when Malt Soup feeding is successful, quite prevented by starch addition. This is probably due to the colloidal protection exerted by the starch, maltose and its products being crystalloids and starch in its unchanged shape a colloid.

In the preparation of Malt Soup mixtures, the physical manipulation of the material is important; the flour should be well blended with the milk or a little water and the Malt Soup should be diluted with the water before these two mixtures are mixed together; the object of this is good physical diffusion. Ordinarily in private practice we carry out the original directions and cook everything after mixing. In hospital practice we have gotten the habit of boiling the starch, Malt Soup and water in standard strength and adding the milk after the cooking is concluded. It becomes almost necessary that some such simplification be employed if this food is to be used in variable proportions, as it should be, in a fairly large hospital practice. In results, there seems to be, as a rule, no difference; if for other reasons you consider that milk needs cooking in any particular case, cook it; but not merely because it is to be added to Malt Soup.

The formulas we use are, of course, modified and adapted to the individual, exactly the same as though we were using other food materials. As a rule, we use flour and Malt Soup about equal in bulk; if this produces too much laxity of the bowels, we may reduce the Malt Soup element without changing the flour. A measured ounce of Malt Soup weighs between eleven and twelve Troy drachms; or in other words, about 10/7 of an ounce. It contains, we are told, 7/10 of carbohydrates; therefore a measured ounce contains about a weighed ounce of carbohydrate. A measured ounce of flour, be it wheat, barley flour or one of the other proprietary foods, weighs about a half ounce. In using the popular domestic measures, by taking one ounce or two tablespoons of each of the two materials we may calculate one and one-half ounces in weight.

*Indications.*—The programme of this evening might suggest that various ones among us come here as protagonists of one form of infant feeding as against others. I trust we all use any and all forms when they seem indicated, with a clear knowledge as to why we do what we do. Then under what circumstances do we employ Malt Soup?

Malt Soup quite often causes vomiting and is usually laxative, so should not be first choice in a case with vomiting or loose stools. There are many exceptions to both these effects, however, so these conditions are sometimes improved by its use.

While undoubtedly it works perfectly well in normal cases, we still hold sufficient prejudice for the old-fashioned, presumptively more appropriate materials, ordinarily to use them. The cases to which Malt Soup seems most appropriate are children from one to six months of age who, without showing gross indigestion, are materially under weight, weighing less or little more than when born, and who seems unable to take a sufficient amount of fat and of other types of carbohydrates to gain weight. In these cases, if they are not too bad, a change to a Malt Soup formula of corresponding percentage value, will commonly cause a very prompt improvement in the character of the stools, and very shortly an increase can be made upon which they gain; often they gain even without the increase by reason of the fuller absorption and utilization of the food. After one to three months of this form of feeding we like to try to omit the Malt Soup, perhaps replacing it by lactose, but often being satisfied with a plain starch solution of the properly strong formula now possible. We freely confess the difficulty we frequently find in making this change and so are apt to be dilatory in doing it. We have no stock formulæ to use any more than when we employ other food materials, but inasmuch as we employ this chiefly in cases of difficult feeding, we are inclined to use, or at least to begin with formulæ based on whole milk. Perhaps more often than any other exact figures using ten ounces of whole milk, an ounce by measure each of Malt Soup and flour and a sufficient quantity of water to make thirty ounces. This can be readily calculated and is seen to contain one and one-third per cent fat, one and two-tenths proteid and a little over six per cent carbohydrates. If or when we are able to use richer milk, as a rule we employ some other material. The original source of starch employed was plain white wheat flour and we usually follow this practice. There is no reason why we should not, and occasionally we do, use starch in other forms, such as barley or some of the proprietary plain starch foods. Our experience with the American Malt Soup product has been limited but has seemed as satisfactory as with the imported.

*To summarize then.*—Malt Soup as a basis for milk modification affords an opportunity for the utilization of large quantities of available carbohydrate and is specially valuable where a child cannot take or fails to gain on average amounts of the usual food constituents.

A few illustrative cases in brief outline may be worth while:

E. K., born July 2nd, therefore four weeks old when first seen July 29th. Birth weight, 5 pounds, weight when first seen 5 pounds six ounces. Only breast feeding to date but quite unsatisfied, stools scant and green and child suffering from exfoliative dermititis, in general a wretched specimen. On a milk sugar formula she gained 8 ounces in a week but had a great deal of colic and the stools were not good. On shifting to Malt Soup the baby has gained from 4 to 8 ounces each week, while the bowels became normal and comfort ensued almost immediately. On October 28th, weighed 9 pounds 10 ounces, a gain of 68 ounces in thirteen weeks.

W. J. K., born June 12th, therefore about four months old when first seen October 7th. Birth weight 7 pounds 8 ounces; weight at four months 7 pounds 7 ounces. During first two weeks on a formula containing 14, then 15 ounces of whole milk, Malt Soup and flour each 2½ tablespoonfuls in a total food quantity of 40 ounces, it gained a pound. Steady gain since of about an ounce a day, *i. e.,* 35 ounces in six weeks.

R. F. W., born September 8th; six weeks old when first seen October 21st. Birth weight, 7½ pounds; present weight 6½ pounds. Was started on a formula containing 7 ounces of 7 per cent milk, two tablespoons each of Malt Soup and flour and water up to 32 ounces. On this formula it had much colic and some diarrhea. Put on a Milk Sugar formula, in two weeks it had achieved much comfort but no gain. Put on whole milk 13 ounces gradually increased to 15, Malt Soup and barley each two tablespoons, water to 32 ounces; this on November 4th when it weighed 6½ pounds. November 16th weighed 7 pounds 4 ounces; November 21st weighed 7 pounds 12 ounces. Comfort and stools quite satisfactory.

## ALBUMIN-MILK.*

**S. Feldstein, M.D.,**

Brooklyn-New York.

SPEAKING broadly infants in whom artificial feeding does not succeed are classifiable into two chief groups; those that have hard and infrequent stools, and those that suffer from more or less constant diarrhea. For the former class, we have learned empirically to prescribe low fats and high readily assimilable carbohydrates, best represented by the use of Keller's Malt Soup preparation.

But by far the largest number of unsuccessful feeding cases are found amongst those infants that suffer from more or less frequent attacks of diarrhea. These are the cases most difficult to manage. With each recurring attack more ground is lost, until finally the tolerance for any kind of food becomes so reduced that life can no longer be sustained. For this large class of difficult feeding cases, help has apparently come from that component of the milk which until quite recently has been considered the most harmful and dangerous.

To understand the theoretic basis for the use of albumin-milk as a therapeutic food agent, it is desirable briefly to recount the careful observations of Finkelstein and Meyer on the mode of production and the factors influencing diarrhea in infants. They determined that most cases of diarrhea at this period of life are due directly to fermentation of the carbohydrates in the intestinal canal. In the process of excessive carbohydrates fermentation a number of fatty acids are produced which by stimulating intestinal peristalsis hurry its contents along at an abnormal rate.

The rapidity with which the carbohydrates are fermented depends chiefly on the following factors:

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* Read before the Brooklyn Pediatric Society, November 25, 1914.

1. *The Concentration of the Carbohydrates.*—The greater the concentration the more marked the fermentation.

2. *The Particular Carbohydrate Used.*—The more readily assimilable the carbohydrate, the less there is left in the lumen of the intestine to undergo fermentation. (Arranged in the order of their assimilability the carbohydrates are as follows: Preparations of dextri-maltose, dextrinized flours, plain flour, cane or beet sugar, and milk sugar.)

3. *The Concentration of the Whey.*—The more concentrated, apparently, the more injury to the cells and the more fermentation.

4. *The Concentration of the Casein.*—This component of the milk exerts an undoubted inhibitory action on intestinal fermentation. Just how it does this is not entirely clear. In part it is due to a change in the bacterial flora.

It would seem, then, that the readiest way of checking diarrhea is to remove the sugar entirely from the diet of the infant. But aside from the fact that this is impossible when milk in any form is used, it is far from desirable. The human organism does not bear complete privation from carbohydrates for more than a few days. Sick babies in particular readily pass into a serious state as a result of carbohydrate inanition. They lose rapidly in weight, the temperature becomes subnormal, and collapse soon follows. As in most of the cases under consideration we are dealing with a chronic state of malnutrition, complete removal of carbohydrates is not to be considered. We must then so modify the factors favoring fermentation as to reduce this process to a minimum. This is what Finkelstein and Meyer have succeeded in doing in the milk preparation known as albumin-milk.

*Mode of Preparation.*—A teaspoonful of essence of rennet is added to a quart of milk which is then allowed to stand for about one-half hour at 42° C. The milk is then poured into a cheesecloth bag and the whey allowed to drain off by gravity. No pressure is to be exerted, otherwise considerable amounts of casein and fat are lost. At the end of an hour the whey is drained off sufficiently. The curd is then placed in a fine-meshed sieve and scraped rather than pressed through by means of a potato-masher. While this is being done, it is washed again and again with a pint of boiled water. When it is in a fine state of subdivision, a pint of the best grade of buttermilk is added and the mixture boiled for a short time. During the boiling, the milk is vigorously beaten with an egg-beater and the desired amount of sugar added. In this manner the clumping of the curd is best avoided.

On paper, the technique of the preparation of this food appears simple enough, but in reality it is one of the most difficult of mixtures to prepare properly. It must be admitted that for the ordinary mother this is a practical impossibility. The chief difficulty is to be found in getting a sufficiently fine curd. In most cases this is due to insufficient washing through the sieve. In some it is due to the curd not having been beaten sufficiently vigorously during the boiling; in others to the fact that during its formation the optimum temperature of 42° C. was not maintained. We can only expect these difficulties to be overcome by a person skilled in the preparation of infant foods. Fortunately in this city a properly prepared albumin-milk can be obtained from one of the milk laboratories

On standing a fine flocculent sediment appears, which occupies about one-fifth of the bottle. Slight shaking readily brings the curd in suspension, the preparation then resembling fairly closely ordinary milk. All preparations that do not have this appearance should be rejected. No satisfactory results can be obtained with an improperly prepared mixture. The infants either refuse the food or vomit it soon after ingestion. Moreover, when the curd is clumpy it clogs up the nipple so that only the fluid portion of the food is consumed by the infant.

Albumin-milk has a slightly sour odor and taste. Its unpleasant flavor can be sufficiently disguised by adding a tablet of saccharin to the quart. Only rarely is a well-made preparation vomited.

*Composition.*—As can be seen from its mode of preparation, this food contains the casein from one quart of milk and one pint of buttermilk. The fat is derived from the milk being carried along with the curd. Only the small amount of milk-sugar present in buttermilk is to be found in albumin-milk. By the use of buttermilk we obtain the indispensable mineral salts of the whey without unduly increasing the readily fermentable milk-sugar. Moreover the lactic acid of the buttermilk seems to exert a stimulating action on the intestinal secretion, and at the same time to aid in the conservation of the food.

The percentage composition of the food is as follows:

| | |
|---|---|
| Protein | 3.0 |
| Fat | 2.5 |
| Sugar | 1.5 |
| Ash | 0.5 |

With the addition of the usual 3 per cent dextri-maltose, its caloric value is about two-thirds that of undiluted milk.

*Indications.*—Albumin-milk is indicated in the so-called functional diarrheas of infancy, whether due directly or indirectly to some form of nutritional disturbance. In the various forms of chronic diarrhea and dysenteries it is not so efficacious. While it may be used to advantage in the mildest cases of diarrheas, it is particularly valuable in the more severe and persistent cases. Indeed, in these it is, next to breast-milk, the best of all dietetic agents. Its value consists not alone in its efficiency as an antidiarrheal remedy, but more especially in the fact that sufficient quantities of food can be given in assimilable form while the diarrhea is recovered from. Moreover it tends to raise the tolerance for food so that the dietetic treatment after this mixture is discontinued is likely to be more successful. At the Finkelstein institute where the technique of the administration is naturally most highly developed, it has brought about a remarkable reduction in mortality from nutritional disturbances. Indeed one is justified in saying that with the introduction of albumin-milk, the dietetic treatment of these disturbances has been fairly revolutionized, and that this food or one of its substitutes has become an indispensable agent in modern pediatric practice. It is, however, desirable to emphasize the fact that albumin-milk is not indicated as a feeding agent for normal infants. Only in feeding a large number of infants in an institution is it desirable to use albumin-milk, as it seems largely to prevent the occurrence of the infections which so seriously hamper the artificial feeding of infants in institutions.

*Mode of Administration.*—No fixed rules can be given for the amount of the initial dose, the rate of increase or the quantity and the carbohydrate. In general, we are guided by the appearance of the patient, the previous history, the weight curve, the presence of fever, and toxic symptoms. The least significant index is the character of the stools. It is desirable to precede the administration of albumin-milk by a period of starvation varying from five to twenty-four hours during which water or weak tea alone is given.

The more toxic the patient, the smaller the quantity we begin with. In highly toxic cases it is not safe to start with more than fifteen to twenty drachms in the second twenty-four hours, each feeding being followed by water either by mouth, rectum, or subcutaneous tissue. In the severe but non-toxic cases, the initial dose is usually an ounce ten times a day. The daily dose is increased by two to three ounces until one-fifth of the body weight is given. In no case is it necessary to go beyond this amount; indeed it is best not to give more than a quart a day to any infant. If toxic symptoms persist, we increase very slowly up to one-tenth of the body weight. No further increase is then made until all of the toxic symptoms have disappeared. No second period of starvation should be instituted within a short period of the first.

*Addition of Carbohydrate.*—In the original directions of Finkelstein and Meyer carbohydrate was added only at a later stage of the treatment. But increasing experience has shown that there is great danger from carbohydrate inanition if this mode of treatment is followed. The initial loss of weight continues and serious collapse may follow. At the present time 3 per cent of the readily assimilable dextri-maltose is invariably added from the first. In the further increase of carbohydrate we are guided by the weight and the presence of toxic symptoms. As these symptoms are supposedly due to abnormal metabolism of the carbohydrates, we make no further addition of sugar until all toxic symptoms have disappeared. In general it is safer to increase the food to the maximum quantity first, before increasing the quantity of sugar; although a more rapid gain in weight may often take place by an earlier increase in carbohydrate. But by thus proceeding cautiously we best prevent the danger of intoxication.

The persistence of diarrhea should not lead us to decrease the amount of albumin-milk. In many of these cases the diarrhea is due to intestinal infection. It does not mean that the food is not well tolerated, and more gratifying results can usually be achieved by increasing the food despite the persistence of the diarrhea.

In most cases, however, the stools become formed within a few days. They assume the appearance of the so-called soap stools, which are hard, foul, grayish-white, and resembling putty. They readily fall off from the diapers leaving a stain. (Metabolism studies have shown that this stool is due to a decrease in the total acidity in volatile and fatty acids, increased formation of soap, decreased loss of water, and greater retention of mineral salts.) With the change in the character of the stools are usually associated an improvement in the general condition, disappearance of fever, and gain in weight.

*Substitutes.*—In conclusion, I merely wish to mention the fact that within the last few years a considerable number of substitutes for albumin-milk have been introduced. Most of them possess the advantage of easier preparation. But despite the claims of their champions, it may be said that in the severe cases none is as efficacious as the original albumin-milk.

## THE PRODUCTION AND THE VALUE OF CERTIFIED MILK.*

**Alfred Bell, M.D.,**

Brooklyn-New York.

IN order to thoroughly understand the value of certified milk, it will be necessary for me, in the short time at my disposal, to review briefly the main essential features in the production of this high grade of milk. It is the object to have clean milk not only conforming to the chemical standards, but which contains the least number of bacteria. Bacteria gain access to the milk by being in the pail, or fall from the air into the pail, or from the udder of the cow, or from the hands of the milker, or unless the milk is immediately cooled to a temperature below that favorable for growth and kept at that temperature they proceed to multiply with astonishing rapidity. Now to produce this clean milk nothing must be added to it and nothing taken away from it. Certified milk must be in its natural state, not having been heated and without the addition of coloring matter or preservatives.

These briefly are the standards: Bacteria 10,000 per cubic centimeter the year around is the maximum content and is attained by scrupulous cleanliness and proper cooling. Must contain at least 4 per cent butter fat and must have every characteristic of pure, clean, fresh and wholesome milk.

*The Barn Yard.*—The barn yard must be frequently cleaned and well drained. All manure must be removed far enough away so that no objectionable odor will remain to affect the milk. The prompt removal of manure also lessens the number of flies which are fond of milk.

*The Stable.*—Dairy cattle must be kept in a room or building by themselves. It is preferable, when possible, to have no cellar below and no storage loft above. The stable should be well ventilated, lighted and drained; it should have tight floors, cement preferred, and tight walls and be plainly constructed. The stables should be whitewashed at least twice a year or painted and the paint kept clean. Sand, plaster or lime should be used in the manure gutters daily; clean and thoroughly air the stable at least half an hour before milking; in hot weather the floor should be sprinkled. There should be an adequate water supply and the necessary wash basins, soap and towels.

*The Cows.*—The herd should be examined at least twice a year by a skilled veterinarian. Promptly remove from the herd any animal suspected of being in bad health and reject her milk. Never add an animal to the herd until certain it is free from disease, especially tuberculosis. Every herd shall be tested with tuberculin by a competent veterinarian at least once a year, and all reacting animals at once removed from the herd.

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*Read before the Brooklyn Pediatric Society, November 25, 1914.

All animals testing free from tuberculosis are to be appropriately tagged, preferably in the ear, by the veterinarian at the time of testing. The cows should not be excited by hard driving or abuse; loud talking or unnecessary disturbance; should not be exposed to cold or storm. The cows should be fed liberally, using only fresh palatable food stuffs. Change in the feed should not be made sudden. Provide water in abundance, easy of access, and always pure. No water from shallow wells or springs holding surface drainage should be used for watering stock, cooling milk, or cleaning vessels, nor should any well be located within three hundred feet of the stable or house, unless contamination is absolutely impossible. Do not allow any strongly flavored food like garlic, cabbage or turnips to be eaten; they will affect the flavor of the milk. Clean the entire body of the cow daily. If the hair in the region of the udder is not easily kept clean, it should be clipped. If the sides of the cow are plastered with dirt or manure, as is often the case, a certain amount is sure to fall in the pail during the milking. This is where the trouble really begins, for this dirt and manure abound in bacteria which cause decomposition in the milk and thereby induce intestinal diseases in children fed on it. After a cow is cleaned and ready for milking she should be prevented from lying down until she is milked.

*The Milking.*—All milkers and all persons handling the milk should be clean in all respects and should avoid contact with contagious diseases. In case of any illness in the person or family of any employee in the dairy such employee must absent himself from the dairy until a physician certifies that it is safe for him to return.

The milker should wash his hands with warm water and soap and clean his nails just before milking. He should wear clean, dry garments used only when milking and kept in a clean place at other times. The employees receive anti-typhoid vaccine.

Brush the udder and surrounding parts just before milking, and wipe them with a clean damp cloth. Commence milking at the same time every night and morning and milk quietly and thoroughly. Use a pail with an aperture not over eight inches in diameter. Throw away the first few streams from each teat. This first milk is watery and of little value, and during the intervals between milking the bacteria from the air get into the cow's teats and grow with great rapidity. These bacteria cause early souring of the milk. If, in milking, a part of the milk is bloody or stringy or unnatural in appearance, the whole milk of that cow should be rejected. All milk from cows sixty days before and ten days after calving must be rejected. Milk with dry hands; never allow the hands to come into contact with the milk. If any accident occurs by which the pailful, or partly full of milk becomes dirty, do not try to remove this by straining, but reject all this milk and rinse the pail.

Milking stools should be kept clean. Galvanized iron stools are recommended.

No persons should be allowed in the stables during milking hours except those directly engaged in the work.

Remove the milk of every cow from the stable at once to a clean, dry room where the air is pure and sweet. Strain the milk through absorbent cotton or a flannel cloth.

*The Dairy.*—Cool, bottle and seal the milk as soon as possible after it is strained. The rapid cooling of milk is a matter of great importance. The milk should be cooled and kept below 45 degrees F. Aeration of pure milk beyond that obtained in milking is unnecessary, though in a good, clean, sanitary milk room, the immediate cooling of milk by passing over a suitable milk cooler is desirable.

Clean all dairy utensils by first thoroughly rinsing them in warm water; then clean inside and out with a brush and hot water, to which a cleaning material such as washing soda has been added; then rinse, and lastly sterilize by boiling water or steam. After sterilizing, keep all utensils inverted and free from dust or contamination until wanted for use. Old cans, pails and tinware in which the tin is worn off, or where there are seams and cracks are hard to keep clean, and should not be employed.

The commission recommends that where possible live steam be turned into the bottling room to settle all dust before the sterilized utensils are placed therein, and also recommends steam for settling dust in the stable before milking.

No part of the care of cleaning of the utensils or the handling or the bottling of the milk should take place in any dwelling house. Rooms especially for this work should be maintained.

The certified milk from each dairy is to be bottled and sealed upon the farm where it is produced. The bottling room should be light, clean and neat. Windows and doors should be kept closed while bottling.

When filled the bottle is sealed with a simple pulp cap. Over this is placed a cover-all cap approved by the commission. On the cap is printed the name of the dealer and the statement that the milk is certified by the commission for use on a certain day. Bottles as soon as filled and sealed are to be packed in finely cracked ice. Plenty of ice is necessary for the proper keeping and shipping of milk, mainly because it prevents bacterial growth. Use it very freely.

In all the work of making and handling certified milk, observe and enforce the utmost neatness and cleanliness about the cattle, their attendants, the stable, the dairy and all utensils.

*Examinations of Milk and Dairy Inspections.*—Examinations of milk will be made with frequency at the option of the commission according to the season and condition of the milk and at least once a week.

All samples required for examination are to be furnished free of cost by the dealers and collected at the discretion of the commission.

Reports upon these examinations will be sent to the producers and dealers.

Inspection of farms and conditions under which the milk is produced and handled are to be made at the direction of the commission.

When the Milk Commission finds upon inspection that a dairy farm with its herd, stable, dairy buildings, utensils and general surroundings, has been put in proper condition for the production of such high grade milk, and is managed according to the suggestions of the commission, chemical and bacteriological examinations of the milk produced on that farm are ordered. If it is found by the experts employed by the commission to have attained the standard set, the Milk Commission will certify that the milk from such approved dairies meets its requirements.

Milk thus produced, bottled, capped, sealed and cared for is known as certified milk.

The dealers handling certified milk must keep it from the time it is received until delivered to the consumer at a temperature above the freezing point and below 45 degrees F. This means well packed in ice in warm weather and not allowed to freeze in severe winter weather.

The commission's certification will continue as long as its standards and requirements are maintained. The commission reserves the right to change its standards within reasonable limits upon due notice being given the dealers and producers.

Dairymen are required to properly fill out, sign and mail each week the postal card report furnished by the commission.

That the cost of certified milk production is greater than that of ordinary milk is evident to anyone who carefully observes the requirements. Not only is the original output more expensive but every section of the work demands intelligent and continuous oversight. The cows must be in perfect health and of breeds selected with reference to the amount of butter fat their milk contains. Such cows often cost more than those of ordinary mixed breeds. The yearly tuberculin test sometimes decimates the herd thereby causing a most discouraging pecuniary loss to the producer. Many other things added to these make the production of certified milk costly, hence the increase in price charged above that of ordinary market milk.

In infants and children, therefore, it is a recognized fact that clean, wholesome, standardized milk from cow to consumer with a bacteria count of less than 10,000 per cubic centimeter, not less than 4 per cent butter fat, immediately cooled, iced and bottled at the dairy and from cows cleaned and properly taken care of and free from tuberculosis is the only raw milk. The decrease in the morbidity of children in the summer time and the decrease of diarrhœal diseases of infants during the summer months may be properly laid to the work that has been done by the medical milk commissions throughout the city, state and nation. Certified milk saves infants and diminishes the prevalence of tuberculosis, typhoid fever, diphtheria, septic sore throat and other diseases. By other diseases, I mean the intestinal diseases of infants. All these diseases have positively been traced to the germs found in milk. Some of these germs have been derived from the cow and others have found their way into the milk through human agencies. Now one word about the consumers: Consumers should remember that the sense of sight, taste and smell help little or none in the buying of milk, less certainly than in any other article of food or drink, because milk may be dangerous without any manifest change. Only scientific tests reveal its true character. Unfortunately few consumers can make use of these tests. The purchaser of ordinary market milk must rely mainly upon the integrity of the milk dealers; with certified milk it is the function of the Milk Commission to make the necessary scientific tests and thus assure the consumer of its purity. The Milk Commission has been profoundly and painfully impressed by the careless handling of certified milk in many households. All the care given to it at the places of production, on the railroad, in the milk depots and to the very threshold of the consumer may be, and often is, wasted in a few hours through lack of proper care and insufficient use of ice in the home. Every bottle of certified milk is practically always covered with fine ice when the driver takes it from his delivery wagon to leave it at a consumer's door. Too rarely we fear is it again surrounded with ice or ice-water as it should be to keep it in good condition until used. All criticism and complaints of consumers have throughout the ten years been promptly and carefully investigated by the commission and in nearly every instance it has been found that the milk complained of had been carelessly managed in the home after its delivery. It is upon infants and children that such lack of care proves most disastrous. It should be remembered that when milk is modified in the home for infant feeding the diluting agent should be cold be it water, thin gruel or anything else, for the addition of a warm fluid of any sort raises the mixture to a temperature at which bacteria grow with great rapidity and spoil the baby's milk. After milk is modified the bottles containing it should be kept in ice or ice-water. No better method for keeping milk cold can so generally be used. A small agate ware or wooden pail is good for this purpose and can be kept in an ordinary ice box. *Never warm the baby's milk until just before feeding.*

## PROPRIETARY FOODS.*

**Louis C. Ager, M.D.,**

Brooklyn-New York.

| | Fat | Protein | Lactose | Starch | Total Carbohydrates | |
|---|---|---|---|---|---|---|
| Nestle's ........ | 5.75 | 11.56 | .21 | 16.00 | 77.00 | |
| Allenburg's ..... | 13.00 | 9.00 | 32.00 | 0 | 67.00 | Considerable dextri-maltose |
| Malted Milk .... | 8.36 | 13.00 | .39 | 0 | 71.00 | Chiefly dextri-maltose |
| Mellin's ........ | 1.15 | 10.50 | .37 | 0 | 79.00 | Chiefly dextri-maltose |
| Benger's ........ | .83 | 12.00 | .36 | 59.00 | 77.00 | |
| Imperial Granum. | .44 | 13.00 | .21 | 74.00 | 80.00 | |
| Eskay's ......... | 1.20 | 6.56 | 39.00 | 28.00 | 88.00 | |

In many of the B. R. T. cars there is being displayed to-day an advertisement which states that cows milk is dangerous on account of the prevalence of foot-and-mouth disease and that Nestle's Food is a safe and adequate substitute for breast milk. This statement is so utterly false and is so potent for evil that it ought to be suppressed by the Health Department. To pass upon the value of any of the proprietary foods it is necessary to know their food content. The analyses of the more important is given in the table. A moment's consideration is sufficient to show how totally deficient they would be if diluted with water. Most of the manufacturers now urge their use as milk modifiers. Used in this way they supply chiefly extra carbohydrate in one form or another,—partially cooked starch, dextri-maltose, or milk sugar. These carbohydrates are exceedingly valuable in a large percentage of feeding cases, but they can be supplied more cheaply, accurately and simply under their own names. The only possible reason for the use of proprietary foods is the inability to secure milk, cereals, and sugar.

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* Read before the Brooklyn Pediatric Society, November 25, 1914.

## LABORATORY FEEDING OF INFANTS.*

**F. W. Howe, B.S.,**

Boston, Mass.

IT has been scarcely a generation since the idea of feeding infants by means of a laboratory was born, it being in 1891 when Mr. Gordon, with Dr. Rotch, of Boston, developed the idea, and appealed to Mr. Walker to finance and guide the undertaking. It seems peculiarly fitting that almost at the close of a generation of such feeding, the Brooklyn Pediatric Society should feel it appropriate to discuss more fully the aim and object of laboratory feeding, what it has accomplished, and its future usefulness and possibilities. It speaks well for the broadminded and liberal spirit of your society that you have decided to incorporate the laboratory side of infant feeding in your subject of the evening—Symposium on Infant Feeding.

Coming here this evening as the scientific director of the Walker-Gordon Laboratory Company, I wish to avoid any misunderstanding on the part of anyone in the audience as to the ethics of my position. With that in view, I trust that you will pardon my stating that I am also the director of the food laboratory of the Boston Floating Hospital, and director of the food laboratory of the New Infant's Hospital, in Boston, as well, and this evening I am speaking distinctly from a professional standpoint, as an exponent of the laboratory feeding of infants.

In the early days of the laboratory in Boston, it was hailed as the panacea of all the ills of infancy; it was flooded with prescriptions of all sorts and kinds. By some physicians it was thought to be the place where some universal baby food was dispensed, by others, that some stock prescription according to age could be prescribed, and that, if it did not agree with the infant it must be the fault of the laboratory. Still others, influenced by the leadership of Dr. Rotch, believed that all prescriptions should be written in percentages and that only those so written would be filled.

Now, whatever our individual beliefs are regarding the necessity and value of writing prescriptions in terms of percentages, it has very little to do with the main question, laboratory feeding. In order to define its aim and objects and its function, I wish to quote to you the words of Dr. John Lovett Morse, of Boston, in an address given before the Wayne County Medical Society, May 30, 1909:

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*Read before the Brooklyn Pediatric Society, November 25, 1914.

"The object of the milk laboratory is twofold: First, to provide a clean, constant and reliable milk supply, and second, to provide a place where combinations of milk may be accurately prepared under the best possible conditions according to physicians' prescriptions. The laboratory does not produce an "infants' food." Modified milk prepared at the laboratory, or as it is often called "laboratory milk," should never be included in the same category as the various foods prepared by the manufacturing chemists. The laboratory merely fills physicians prescriptions. Its relation to the physician is the same as that of the pharmacy, neither more nor less. The laboratory has no theories as to infants feeding. It has no opinions as to whether gravity cream or centrifugal cream is the better in the preparation of modified milk. It has no theories as to whether whey mixtures or cereal diluents should be used to diminish the size of the curds. It merely prepares any mixture designated by the physician. It will prepare it with gravity cream or centrifugal cream as he desires. If required it will even add one of the proprietary foods. It sends it out heated or unheated, as requested. This being the case, if modified milk prepared at the laboratory does not agree with the individual baby, the physician who ordered the milk should be blamed and not the laboratory. The laboratory also sells milk and cream of definite fat percentages to be used in the home modification of milk.

"It is self-evident, of course, that those who do not believe in modified milk for infant feeding can have no use for the laboratory. This class is fortunately, however, gradually diminishing in numbes as the result of education and in response to the demands of a public which is rapidly increasing its knowledge of the proper methods of infant feeding. Much of the criticism has been from physicians who have failed to appreciate the purpose and the capabilities of the laboratory. They have apparently not understood that the laboratory does not produce any special food or that it requires any more intelligence to prescribe modified milk than it does to order people to use the various proprietary foods according to the directions on the can. They do not seem to realize that the laboratory will put up anything which they order, that if, for example, they prefer a mixture prepared with gravity cream, the laboratory will prepare it with gravity cream, or that if they prefer mixtures prepared with cereal diluents, that the laboratory will put in cereal diluents."

As to the second part—what the Walker-Gordon laboratory has accomplished. It has furnished a central place with trained assistants and all kinds of materials known to the scientific world. Let me mention a few: whole milk that is fresh and clean, gravity and centrifugal creams of varying strengths, fat free milk, whey, casein milk, all kinds of sugars, cereals, cereal jellies, milks inoculated with different bacteria, proprietary foods, etc., a place where all physicians of varying beliefs may send their prescriptions and have them filled with accuracy and uniformity to feed the infants under their care. As a result of this, the feeding of infants through a laboratory today is rapidly approaching an applied science. It substitutes accuracy for inaccuracy, uniformity for lack of uniformity. It places the control of a feeding case just where it should be, absolutely in the hands of the physician, no variations from day to day through unstandardized milks, anxious mothers or nurses not understanding or not following directions.

As to the future usefulness of the laboratory, that is a question which the members of your profession can best answer. It is in your hands to supply the answer. In these days the physician is judged by his results the same as are men in other callings, and it is inconceivable to me why a physician should wish to use his valuable time and risk his professional reputation in explaining, say to fifty different mothers or fifty different nurses, just how each individual mixture should be made and expect to obtain a uniform result in each case. As to the economy side of this question, I come more firmly each year to believe that old adage "The best is the cheapest in the end." I believe we have over emphasized the importance of making infants food in the home, and under emphasized the desirability of the mother or nurse spending the equivalent of the time out of doors with the child. With the average mother, the question of raising infants occurs only two or three times during her lifetime and it would seem to me that the wisest, the best, the most satisfactory, as well as the most economical thing that she could do through the first few years, the most anxious and trying time of the child's life, while it is becoming adjusted to our methods of feeding, would be to place the responsibility and care in the hands of the physician. Adopt the old Chinese method if you will, and I know of cases where it has been done in this country, and the result will be economy to the family and the enhancement of the physician's reputation.

As to the future possibilities, it would seem to me that there are many. In regard to the Walker-Gordon Laboratory Company, I can say that, while in one sense it is commercial in that it sells its products, it is more than that, it is scientific in spirit and professional in attitude.

By scientific I mean, it is a place where members of the medical profession may conduct original investigations independently, in some cases free, or at a nominal price, or if they wish the advice or assistance of its director on the working out of any milk problem, the laboratory stands ready to co-operate in every possible way.

We are on the threshold of many discoveries and developments of the feeding problem where milk plays a part, not only of infants, but invalids, for milk is a complete food not only for man but micro-organisms as well, and the human body is an ideal incubator, and it would seem necessary that we have a place not only well equipped but with trained experts where all members of the medical profession may feel free to work out their own individual feeding problems or private practice with all the light that modern research can make available.

# ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS.*

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TO bring about the complete subjugation of an enemy possessed of such power and endurance as tuberculosis it has long been recognized that only an alliance of all opposed forces, utilizing all known resources and working in perfect harmony, will be effectual. From the viewpoint of tuberculosis as a social question, as a financial problem and as an individual physical condition, it must be seen and attacked. To the interested physician the hope and thought of some single unerring weapon to subdue and destroy the foe in the individual pathological condition—some vaccine, serum, tuberculin—on which he can rely with undoubting courage, is ever present. Awaiting this, even a guerilla warfare is acceptable as an addition to the organized general movement and equipment, and every means that promises any advance and real assistance is gladly welcomed in camp. It is in this sense I would speak of artificial pneumothorax—a contributing arm in the warfare on pulmonary tuberculosis.

Far back in medical history, air in the pleural sac from disease was a well recognized condition. In 1805 Itart gave it its present name. Artificial pneumothorax was first mentioned in the literature by Carson, of Liverpool, in 1820. He reported that in a rabbit he had compressed by air, through incision of the chest wall, a lung. Five days later, in the same animal and in the same way, he compressed the lung of the opposite side. Several (5) days later he killed the animal and on autopsy found the diaphragm concave. He announced at that time his belief that such compression would be beneficial to human beings suffering from pulmonary tuberculosis; but never in his lifetime was this suggestion acted upon. In the years 1834, 1843, 1849, 1856 and 1867, mention was made in the literature of patients who had suffered from pulmonary tuberculosis and who, having received injuries of the chest wall which caused traumatic pneumothorax, were cured of their lung disease and in all these reports reference was made to Carson's work. Many observers reported, too, the beneficial results to a tuberculosis diseased lung of pleural effusions—providential pleuresies as Gaillard called them.

Providential, too, seemed some of the spontaneous conditions of pneumothorax from disease. In place of the usually fatal termination, improvement, instead, followed. In 1897, in the *Lancet,* S. West reported 167 cases of pathological pneumothorax, in eleven of which cure of the underlying tuberculous lung resulted.

No practical application of these observations had been made prior to 1888, when Potain injected nitrogen into the chest of a patient with already existing pneumothorax for the purpose of maintaining the compression.

In 1882 Forlanini had published in Rome an article on the use of artificial pneumothorax, but it was eleven years later (1894) before he published the account of his practical work, which began in 1892. To him has been given the title of "Father of Artificial Pneumothorax," though no further mention of his work was made, and it was so little known that Murphy, of Chicago, in 1898, had never heard of it and published as an original work the report of five cases of pulmonary tuberculosis he had himself treated in this way. Despite Murphy's report, little appreciation was gained for it. Forlanini, of Rome, and Brauer, of Breslau, however, persisting in its use devising, each, a method of operating.

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* Read before the Brooklyn Society of Internal Medicine, November 27, 1914.

It was not until 1912, two years ago, owing to the work of Drs. Mary Lapham, Robinson, Floyd and a few others, and co-incident with work in Europe, that it was revived in America. How slowly it had advanced, and how rapidly it is now coming into use, may be learned from the fact that in England, prior to 1911, but two patients had ever received this treatment; now it is difficult to enumerate them. In the year 1912-13, in Denmark, in one sanatarium alone, over two hundred patients were injected. Murphy with his associates has treated in this country 460 patients with over 2,500 injections, while Forlanini reports his injections by the thousands. In nearly all civilized countries it is already in use, while the amount of literature on the subject must number in articles nearly a thousand.*

*Method.*—It is needless to say that, for the successful use of this measure, exactness in the diagnosis of the physical condition is of utmost value, requiring the assistance of complete history and thorough physical examination. To ensure accuracy, the x-ray frequently becomes a necessity. By it the condition of the lung, before compression and shortly afterwards, will best be known and the presence of *slight* pleural effusions discovered. In many cases physical signs indicate collapse of the lung, but the x-ray would show that compression was not complete—that perhaps, adhesions at root or periphery prevented. Some observers, too, report their ability to distinguish by the x-ray areas of adhesion of the pleura and free spaces and from this examination select their site for operation. From the experience of the writer, this is claiming too much. Neither the x-ray nor physical signs is able to reveal at times adhesions sufficiently firm to prevent injection into the space. Moreover, unless in an institution and one well endowed, routine use of the x-ray before and after every injection becomes a matter of expense almost prohibitive.

The gas injected is nitrogen, preferred to oxygen on account of its lessened rapidity of absorption. Commercial nitrogen varies much in its concentration. Quantities purchased, supposedly pure, have been found to contain less than 79 per cent, although it is not difficult for an institution to prepare its own and obtain 95-97 per cent at very low cost. In either case it is passed through a solution of pyrogallic acid, which purifies it, and by the hydrostatic pressure of the fluid the gas is gently forced into the chest.

There is no good reason why sterilized air might not be used in place of nitrogen or oxygen. Analysis of gas drawn from the chest two days after nitrogen was injected showed a chemical composition, owing to the diffusion of gases from lung and blood vessels, almost the same as when air had been injected.

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* A current topic of the last few weeks is the award of the Santoro Prize by the Academy of Science of Rome. This prize, amounting to 10,000 lire, is given every two years for the most important contribution to science that has direct practical application. It has just been awarded to Dr. Forlanini, Professor of Clinical Medicine in the University of Pavia, for his work in treating pulmonary tuberculosis by artificially induced pneumothorax (*J. A. M. A.*, Nov. 21, 1914).

Oxygen has been preferred by many for the first injection, despite its more rapid absorption, in the hope that it would be less depressing.

The apparatus used is that devised by Floyd and Robinson, which combines nearly all advantages. It is portable; it does not give very great pressure and has a very simple arrangement of valves. The needle used is distinguished by its arrangement, its attached trocar and its dull point. For injections after the first, I use a much smaller needle—a hypodermoclysis, or long hypodermic needle, without a trocar and with a much sharper point than the Floyd needle.

The most important part of the instrument is the manometer, a simple U-shaped glass tube containing water, firmly secured and conveniently placed to vision. It is the manometer, no matter what apparatus is used, that, by its readings, has made artificial pneumothorax safe and so permitted its present wide use.

There are two methods in use for securing entrance to the pleural sac, named after their originators, the Brauer, or incision, and the Forlanini, or puncture. Selecting his intercostal space, Brauer, under local anæsthesia, makes an incision 1½ to 2½ inches in length down to and exposing the costal pleura. Through this can be seen, if adhesions and thickening do not exist, the moving, gray, marble-like pulmonary covering. With the needle under the direct vision, the costal pleura is then punctured with the certainty that the lung is not injured and that the point is in the free pleural space. If adhesions are present at that point, another is selected. The wound in the chest is afterwards sutured and proper dressings are applied. Pneumothorax once established, subsequent injections are made by puncture.

The danger of infection and the length of the wound which may be necessary, despite its advantages, have generally caused the replacement of incision by puncture and in this country I know of no one who practises the Brauer technique.

Helped, when possible, by the x-ray, the writer relies principally on percussion in the selection of a point for puncture. Given an area with good resonance to very light percussion on ordinary inspiration—with that resonance decidedly increased on *deep* inspiration—about the fifth or fourth intercostal space at the anterior axillary line, that space is chosen and the skin prepared by painting with tincture of iodine. A 1 per cent solution of novocaine with andrenalin is inserted by hypodermic needle *into* the skin. Through the bleb thus raised, the needle is slowly pushed, infiltrating as it goes, into the pleura. Complete anæsthesia at the point of puncture is of necessity, no less than complete asepsis at every step. Into a small stab wound of the skin made by an iridectomy knife, the pneumo-needle is pushed. When the intercostal fascia and pleura are reached there is a feeling of increased resistance, which gives way before the pressure with sudden release of tension. The dull point protects the lung to some degree. By means of the rubber tubing, the needle is connected to the manometer. If the end of the needle is free in the pleural space, negative pressure is shown by the fluid in the manometer, which will rise and fall with respiration, but maintain a mean negative. If the pressure be positive, with no oscillations, we are in the chest wall or in the lung. If in the lung, the fluid in the manometer *can* be moved by deep inspiration, but will immediately drop to normal, or near it.

Absolutely certain that the end of the needle is in the pleural space, the gas, under little or no pressure, is allowed to flow. When 100 c.c. have entered, it is shut off, manometric reading is again taken and pressure noted, and this reading is repeated every 100 c.c. until positive pressure is obtained. The amount injected at the first time varies from 100 c.c. to 1,000 c.c. with different operators. It has been my practice to inject about 400 c.c. the first time and less if pain, dyspnea or other warning appears. It has been shown that at the beginning of treatment, the rate of absorption is about 100 c.c. in twenty-four hours; later, when collapse of lung has been obtained, about 25 c.c. daily. Depending on the amount injected, the condition of the chest and the patient, is the second injection given. In my practice it is the third or fourth day. Forlanini, when the condition of the patient so indicated, has injected as often as twice in the first day. The interval between injections is then gradually lengthened to one week, to four weeks and continued at this frequency for the full time of compression, which should be from 1½ to 2 years. During this time the amount of gas each time is increased to 1,000, 1,500, 1,800 c.c., though never allowing the mean positive pressure above two points. Before the first injection the patient is given a hypodermic of morphin with atropin to prevent reflex cough and diminish pain, but this is not repeated at the subsequent fillings, nor is any stimulant given unless special reasons indicate.

After the first injection, the patient is carefully removed to his bed, and besides ordinary watchfulness, little else is needed. During the first twelve to eighteen hours it may be necessary to administer a hypodermic of morphin for pain, but rarely thereafter. The temperature reaction seldom exceeds 1° F. After the subsequent injections, a few hours' rest permits the patient to resume his usual duties. I have seen patients called in from the grounds, given an injection (not the first one) and in a few minutes afterwards walk out. I have been told that it is not uncommon in Switzerland for a patient to ride on his bicycle to the doctor's house, receive his injection, mount his wheel and immediately ride home, all of which must not obscure the fact, however, that more accidents happen with subsequent injections than with the first one.

*Object Sought.*—The primary purpose in artificial pneumothorax is simply a mechanical one—to place the lung at rest—*rest, complete* and *permanent.* In the attainment of this, the lung is compressed, and all air driven from the alveoli. Autopsies on animals with normal lungs compressed for months, have shown after re-inflation a normal condition of the air cells. On human beings, too, who have had artificial pneumothorax and subsequently died from non-tuberculous disease, there was shown not only anatomic cure of the disease, but a normal condition of the healthy part of the lung that was compressed. It is true that two recent experiments on dogs (Kessel) with normal lungs compressed for one to two years have shown an increase of interstitial tissue, obliteration of some blood vessels, and a diminution in size after inflation to one-half or three-quarters its normal. This is a possible drawback which must be considered in the selection of cases for treatment, though Murphy says that in his fifteen years' observation he has not found one case that failed to fully expand.

When the pressure has been made upon the *diseased* lung, cavities collapse, the toxic contents are eliminated by way of the bronchial tract and not again secreted, absorption stopped, toxemia eradicated or greatly reduced and the liability to hemorrhage removed. The sputum loses its mucous and purulent character, the bacilli are absent from it, the appetite returns, weight is gained and the circulatory tone is restored. In addition, there is removed in this way a focus of infection for the entire body and the complications of the throat, the intestine and the meninges will be less frequent. *Moreover, this procedure does not interfere with any other treatment.*

The changes that take place *in* the diseased lung are similar to those in healing tuberculous bones and joints. The walls of the collapsed cavities coalesce, there is proliferation of granulation cells, formation of fibrous tissue, and scar. To both autopsy examination and to physical signs the result is complete cure.

During the compression the other lung takes on a condition of compensatory emphysema, which, with increased nutritive processes of better circulation, tends to cure slight lesions therein, but when the pathological process is advanced, may intensify it. Rest of the diseased lung, with *total abolition* of all respiratory function, is the immediate object of the treatment and though partial compression may ameliorate, the degree of relief and cure will depend on the completeness with which the lung is collapsed.

*Results.*—The terms used by many writers in describing the results of treatment are so strong as to challenge belief, but when a man in the position of John B. Murphy, of Chicago, states that there are now thousands of cases symptomatically cured by it, over-enthusiasm on the part of other operators may be pardoned. Besides, when it is in use in so many different countries and reports appear emanating from hundreds of sources, patient observation, if not faith, must be granted to it. In such a disease as tuberculosis statistics, especially personal ones, are of value only to the man making them, and I will not offer or defend any. A single case may be more instructive to one person than series to others. I feel, however, that figures from widely different sources may be offered for comparison and study.

Dr. Mary Lapham, of North Carolina, in 1912, published a report of 600 cases she had collected and placed the number cured at 40 per cent.

Dr. Murphy speaks of the percentage cured at 5-40 per cent, depending on the period of the disease when treatment was begun.

Saugmann, of Denmark, in September, 1913, reported that of 64 cases in which he could obtain complete compression 50 per cent were free of bacilli in the sputum and able to work nineteen months after the beginning of the treatment.

Lillingston, who treated the first cases in England, reported in 1913, 18 cases *in the third stage and in very bad condition.* At the end of a period of from six months to three and a half years 5 were dead and 13 living with the disease arrested or being arrested.

In 1913, Cleveland Floyd, of Boston, reported the condition of 28 patients on whom he had made a preliminary report two years before. Eight of the cases *had* shown a complete arrest of active process and of the remaining 20, at this report (1913) 6 "are in excellent condition," while 2 deaths have occurred. Fourteen of the 28 cases were regarded as permanently arrested two years after treatment.

At the annual meeting of the National Association for the Study and Prevention of Tuberculosis in Washington this year (May, 1914), a most valuable of recent reports was made by Webb, Gilbert and others of Colorado. The number of cases in their series in which compression would be obtained, was 54. All of these had disease in both lungs—most of them with cavity, and 25 classed as advanced. Of the 54 cases 25 were recorded as "remarkably improved," 11 as much improved, 9 with slight improvement and 9 not benefited.

With your indulgence, I will read the clinical report of a single case reported by Amrein and Lichtenhahn, taken from many reported in the London *Quarterly,* July, 1913. The *Quarterly,* as you know, is published from Oxford, under the chief editorship of Sir William Osler and others. I selected this case because it shows the universality of the treatment, the authorities who sanction its publication, the severity of the disease itself and the result obtained.

*"Miss L.*—Aet. 22. Ill, 3 years with cough, expectoration and fever. After 15 months at an English sanatorium and a further stay at an altitude of 3,200 feet over the Rhone Valley for 10 months she evinced no signs of permanent improvement. She came to Arosa on September 16, 1912, appearing to be a hopeless case, with cachexia, dyspnoea, palpitations of the heart, night sweats and abundant thick purulent expectoration. The *entire left lung* showed dullness on percussion with tympanitic sounds over the upper lobe and other evidences of cavity, sharp, broncho-amphoric breathing, metallic and consonant rales over the whole upper lobe. Over the lower lobe there were broncho vesicular breathing, many small crepitations and consonant rales, with pleural rubbing at the base. The action of the heart was very weak; the pulse, small, quick and irregular. The expectoration contained tubercle bacilli and elastic fibers.

"For eight weeks the patient was laid up in bed with hectic fever and increasing cough, which became at times so violent that eating was almost invariably followed by vomiting. The heart became weaker and had to be stimulated by camphor and digalen. In the early part of November the fever still increased and a fresh pleural irritation supervened. On November 8th a more intense dullness on the left side was perceptible. A puncture showed the presence of clear serous fluid and with this condition it was possible to enter into the pleural space with great facility, even without moving the patient from her bed in the hotel. On November 11th we entered the intrapleural space and removed about 30 c.c. of fluid by aspiration. Immediately after that the manometer showed negative pressure with good respiratory oscillations and carefully we introduced 1,000 c.c. of nitrogen, obtaining a pressure of plus 2. As was to be expected, the patient exhibited symptoms of shock and increased dyspnoea, and it was necessary to give her inhalations of oxygen, but after three or four hours the dyspnoea diminished and she felt relieved. The effect of the compression of the left lung was quite miraculous. By the evening of the first operation the fever, which had been for three years persisting, disappeared entirely, the pulse dropped from 140 to 92, its quality becoming fuller and stronger. The expectoration diminished to one-fifth its former volume. Sleep was obtained and appetite improved. Seven months later, June, 1913, the patient has recovered to a strong person who is able to walk without difficulty, has increased in weight, shows constant normal temperature and has become quite another person.

*Obstacles and Contraindications.*—Resembling in this respect so many other therapeutic measures, the operation of artificial pneumothorax has obstacles to its successful performance and dangers in its use. Where there have been many attacks of acute pleurisy with large areas of involvement so that the layers have become thickened and adherent, the pleural space becomes practically obliterated and pneumothorax is impossible. In the hands of every operator this failure to inject will occur and in a percentage of cases, depending on the duration of the disease. Brauer says one can never be certain of success until trial is made. Adhesions less dense and less extensive do not constitute a bar, in fact, under very patient and skillful direction these can be gradually released and collapse of lung secured.

Again, when the pathological change is one of great increase of interstitial tissue (fibroid phthisis), complete collapse is less easily obtained.

When myocardial degeneration is present with great loss of heart strength, when the disease involves so much of both lungs that enough normal tissue would not remain to carry on respiration, when there is present disease in other organs which, in itself, would preclude recovery, as tuberculous enteritis, tuberculous kidney, and to much less degree tuberculous laryngitis, when there is so much cavity formation that one may be punctured and cause spontaneous pneumo- and pyopneumothorax, this operation should not be performed.

*Accidents.*—The accidents that may arise from the injection make a list which seems quite formidable, but the very mention of many of them conveys also the preventive measure.

*Air Embolism.*—Following most likely the injection of gas into a blood-vessel, bringing on cerebral hemiplegia or sudden death makes one ever fearful, and its possibility in itself is enough to place this operation in the major class. With care to avoid intercostal blood-vessels and lung, to never permit gas to flow unless surely in the pleural space and with proper manometric readings, this accident is not likely to occur. Murphy asserts that with proper care no accident is probable and that his associates and himself in two thousand injections have had but one accident (a hemiplegia), and that patient died one and a half years later of tuberculosis. Holingren in one thousand injections had one serious and one fatal case of air embolism. Floyd never saw an air embolism in four years' work, while Forlanini, in fifteen hundred injections had four accidents of all kinds—and one of these fatal (pericardial effusion, with miliary tuberculosis).

*Pleural Reflex.*—Called pleural shock, pleural epilepsy, and laryngeal spasm, a severe spasmodic affection transmitted by way of the pneumogastric nerve, is second in importance.

Sundberg reports three cases that came to autopsy. The first died 25 minutes after injection, the cause being spasm of the glottis; the second died after the sixth injection and no cause for the sudden death was found; the third died 36 hours after the eighth injection—hemiplegia. The first and second cases were undoubtedly pleural reflex, while the third was probably air embolism. Since stress has been laid on the local anesthetic and the blocking of nerve terminals with a novocaine infiltration, reports of this accident are becoming infrequent. During the past year and a half I have had but one case of reflex—a severe cardiac syncope, occurring before any gas was turned into the chest and, fortunately, not proving fatal.

*Infection.*—Must be prevented by strict asepsis.

*Puncture of the Lung.*—If in normal tissue, rarely causes more harm than slight hemoptysis; in diseased tissue, may cause spontaneous pneumothorax and a fatal ending.

*Serous Exudates* are so frequent as hardly to be called an accident or complication. The fluid is usually sterile or contains tubercle bacilli and is caused by rupture of adhesions or of a tubercle at the surface, or, perhaps, from the irritation of the gas.

*Orthopnoea* may arise from excessive intrapleural pressure, with much cardiac displacement. The direction of the flow of gas may be changed from the chest or puncture made and relief obtained. Knopf has suggested warming the gas before injection to prevent undue expansion from the bodily heat.

*Subcutaneous Emphysema* frequently follows from escape of gas into the tissues, but is of little importance.

*The Other Lung* though apparently healthy, must be carefully watched. Within two or three days edema may develop from increased blood supply, while it may be several days later that a lighting up of a tuberculous focus there may show itself.

*Indications.*—The knowledge of contraindications, dangers and obstacles to the use of artificial pneumothorax helps make clear the conditions in which it may prove useful. Heretofore, to a great degree, the use of this measure has been restricted to patients with disease of their lungs well advanced. Should it be restricted to these? Should it be applied to the very early cases? Should it be limited to cases of unilateral disease? Company is easily found for one taking either stand. The use and study of this measure but a year and a half in 84 cases for varying periods, does not permit me to take a dogmatic position. I do not believe exact classification of cases indicated can be made, but at this time I *am* convinced the deciding factors must be the patient and his history and that fixed rules in the selection of cases will not avail. Artificial pneumothorax may be used for complete cure or as a smyptomatic remedy.

To stop bleeding otherwise uncontrolled, particularly that so-called chronic sanguineous expectoration, to reduce toxemia, and lessen the likelihood of complication in other organs, no case with sufficient heart strength to stand the operation and sufficient surface of lung for respiration need be denied it. Patients with unilateral disease, especially when cavitation has taken place, are ideally suited, but as patients come to our hospitals here for treatment, unilateral disease is a rare find. There is added a further consideration in long standing cases that we may meet with, that insuperable, mechanical obstacle—the adhesions of many pleural attacks.

Slight adhesions as mentioned above *may* be separated by painstaking work with the gas, and collapse of the lung obtained, but when adhesions and thickening are present that shut off to a great extent or completely obliterate the pleural space, success in forming the pneumothorax is impossible. The writer pleads guilty to failure to enter the pleural space in 18 per cent of his cases, and in many cases more than one puncture was made. Reports have been made of seven and eight attempts in a patient without success. Murphy personally in 36 cases failed to enter in four; his associate failed in five per cent. In the report I read you, of Webb and others of Colorado, in the 83 cases selected for treatment they failed in 23, and two of these by the incision method. Saugman, of Denmark, failed in 30 of a series of 104, while Brauer, reporting four failures, even with incision, states that with all known means of diagnosis, he never can tell in what cases he will succeed in forming the pneumothorax. So the conclusion is forced that in order to receive its full benefits the operation must be performed much earlier in the disease than has heretofore been done. John B. Murphy, reasoning from the analogy of pulmonary tuberculosis to tuberculous diseased joints, insists that it be used from the very beginning—that the diseased lung be put at rest as early as you would a diseased joint, and that the length of time for complete cure becomes correspondingly so much shorter.

This does seem a little radical. Many cases of tuberculosis under less heroic treatment are cured; many cases under no particular treatment or special care have been completely cured, as autopsy records show. There is also the possibility of deficient expansion remaining in the lung after re-inflation—a minor item compared to the disease, but important enough if it can be averted.

If a patient suffering from pulmonary tuberculosis, *though in the earliest stages* of the disease, does not quickly show improvement under the other measures, or, if not improving, a patient cannot avail himself of the best climatic and sanitarium advantages, he should receive *artificial pneumothorax*.

In the *advanced cases* it is the condition of the apparently healthy lung that decides the question of operation, and to form a clear opinion on the activity of disease in that lung and its extent cannot in some cases be done without observation for weeks. Involvement of the other lung does not in itself make the barrier, but the extent and activity of the disease in that lung does mark the limit of safety and hope of good result.

There is another important non-medical factor in the selection of cases—the financial status. Babcock, in his book, has said that the consumptive without money is doomed. Studying the cases in our hospitals here—St. Peter's and St. Anthony's—we find that the great proportion of them—residents of this city—were in circumstances social, civil and financial, that they never could have secured those requisites for complete cure at any time during their illness, besides handicapped by the necessity of earning a living while strength was even fair.

Examination in hospital of several groups of over a hundred each of these patients, with a particular view to artificial pneumothorax, showed less than 10 per cent were not too ill to receive it.

How large is the number in this city to which these facts may apply may be inferred from the figures given in the Board of Health bulletins. According to the last report of the Tuberculosis Census, there were registered in Brooklyn and Queens 9,655 cases. Of this number, 7,556 were attending free clinics, were in the institutions in the city, or homeless. Now, I think it is a fair deduction that not one of these could secure all requisite medical attendance, much less afford climatic and sanitarium advantages. So that to persons in circumstances like these mentioned, though in a very early stage of the disease, I would strongly urge this treatment, made firmer in that opinion by the fact that they would not be incapacitated from work thereby, nor interference given to any supplementary treatment.

In diseases of the lung, not tuberculous in etiology, where the respiratory action and pulmonary tension interfere with recovery, artificial pneumothorax, with its collapse of lung and complete rest, has been curative. Reports in the literature of such cases as pulmonary abscesses, fetid bronchitis, painful pleura from malignant disease, and bronchiectases successfully treated, are becoming more frequent.

Artificial pneumothorax is not a specific cure for pulmonary tuberculosis. It is solely a mechanical measure to give rest to the affected organ, that the reparative work of Nature may not be hampered, and so permit the system more easily to get rid of the disease. It has failed to bring about a cure in many cases, while in many others, for whom no hope of improvement otherwise existed, it has produced wonderful results. The important work with it for us at the present time is the selection of proper cases and securing for them all those benefits which this measure can give.

## REFERENCES.

Floydy, *Trans. Amer. Clin. Assn.,* 1913, No. 29.
*Quarterly Jour. Medicine, July,* 1913.
*Proc. Nat. Assn. S. and P. Tuberculosis,* 1914.
*N. Y. B. of H. Bulletin,* 1914, No. XXXIV.
Murphy and Krenscher, *Interstate Med Jour.,* March, 1914.
Murphy, *Jour., A. M. A.,* 1898.
Knopf, *N. Y. Med. Jour.,* 1913, No. 1790.
Livingston, *Jour. A. M. A.,* 1913, p. 244, and *Lancet,* July, 1911.
Sangman, *Proc. Internal Med. Congress,* London, 1913.
Lapham, *Jour. A. M. A.,* September 14, 1912.
Kessel, *Proc. N. Y. Path. Society,* October, 1913.

# A CONTRIBUTION TO THE CLINICAL STUDY OF HYPERTENSIVE NEPHRITIS.

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## *The Second Paper—The Interpretation of Albuminuria.*

IN the initial article of this series, the following assumptions were presented, and their acceptance asked:

Hypertensive nephritis must have cause or causes and they must operate more or less continuously or the disease itself would not progress. Indeed, on no other hypothesis can this association be reasonably explained, viz.: the presence at autopsy of advanced nephritis in subjects dying from other causes without evidences of the condition in the urine prior to death. It is evident that the causes of the nephritis must have ceased and that the progression must have likewise terminated. Therefore, if causes are removed, the nephritis will have a tendency to cease in its progress. As clinicians it is our paramount duty to ascertain such causes and remove them. Then by suitable dietary and hygienic methods, the kidney load may be reduced to a point well within the factor of safety whether this over-load is composed of toxic adventitious substances or normal end-products of protein metabolism.*

In other words, hypertensive nephritis is regarded purely as a symptom and not as a disease sui generis. The use of the term "nephritis"** is not permissible unqualified by an adjective to indicate its genesis, such as diphtheria, enterogenic, diabetic, etc. It is also evident that in a patient who seeks examination for symptoms which terminate in a diagnosis of nephritis, the causes must be operative and the disease progressing or the symptoms would not have arisen into consciousness.

The diagnosis of an active hypertensive nephritis‡ rests necessarily on the presence of albumin and casts in the urine and on high arterial tension as measured by the sphygmomanometer.† Other methods of examination may be developed at some subsequent time, but for the present the chief reliance of the general practitioner must be placed on these two evidences of the disease. The limitations of both should be carefully defined. In our consideration of albuminuria, the subject will be approached largely from a clinical standpoint. The practitioner is mainly concerned in manifestations of disease and in correct interpretation of clinical evidence. His interest is in functional capacity rather than histological appearance. This does not question the value of pathology. However useful it might be it is quite impossible at the present development of our knowledge to entirely harmonize pathology, the results of experimental measures and clinical manifestations. An attempt to make such an analysis would lead only to confusion, which is the present purpose to avoid.

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* The toxic adventitious substances are products of bacterial activity in infections, of bacterial activity in the colon secondary to many ultimate causes, chiefly due to the lack of assimilation of protein digestion products and finally the products of suboxidation in the tissues at large. These distinctions are important from an etiological and therapeutic standpoint.

** It should be constantly kept in mind that the use of the term "nephritis" to designate a process characterized by connective tissue overgrowth, is permissable only *de facto* and not *de jure*. Chronic interstitial nephritis is not a true inflamation but a degeneration—a substitution of an inferior grade of tissue for one of superior grade. The process is a protective one from the standpoint of nature and in that sense is for the welfare of the organism under the conditions imposed.

‡ A distinction is here made between an active and latent hypertensive nephritis. By latent nephritis is meant marked change in the histology of the organ and without albumin in the urine even in traces and with normal blood pressure. The condition can be suspected from the history and from the presence of cardiac hypertrophy as shown especially by direct X-ray examination, for which no other cause than former high tension is assignable. In the practice of the family physician, who has the privilege of following cases for years at a time, and who has seen high tensions of certain types recede to normal, this diagnosis may be established with reasonable certainty. The subject will be discussed more fully later.

† It is almost useless to say that estimation of arterial tension with the finger and without the use of a good instrument is absolutely futile. No reliance can be placed on the tactile sense even in extreme of hypo- or hyper-tension.

The history of acute scarletinal nephritis is characteristic and the urinary picture is constant. There is a decrease in the amount of urine excreted, leading to retention of water. The specific gravity is high; there is high color; albumin is present in large amount; finally the sediment contains hyaline, granular, epithelial, leucocytic and blood casts and even free blood cells. Renal cells can almost invariably be distinguished. As the irritation becomes more intense the albumin increases, the total amount decreases, and the character of the predominating casts changes in the order given. The slighter irritations yield more of the hyaline variety, and as the irritation increases blood casts become more and more numerous. The relative number of the different varieties is the important point in calculating the amount of damage. Much depends on the examiner and the care with which he works. Latitude should also be allowed for unaccountable variations.

If the clinician hesitates and considers such a urinary specimen the diagnosis of acute parenchymatous destruction will be the first thought. This conclusion is justified by comparison of urinary findings with autopsy demonstrations and it is honored by the teachings and belief of decades. This is the one form of kidney disease which, as has been repeatedly shown, can be diagnosticated with greatest precision. The fallacy lies in the use of the term acute parenchymatous nephritis. It carries into the mind a picture of a secreting or collecting tubule, the epithelial lining of which is swollen or desquamating and the lumen of which is clogged with detritus. By long association, however, a urine of the characteristics given, is supposed to indicate definite histological change in the real epithelium and it does, but nothing is indicated as to the changes which invariably occur in the interstitial framework. Because of the terminology, the usual conception is but half the truth.

If further thought is given to the significance of such a urine, a second interpretation can be ventured concerning functional capacity. In the acute nephritides, functional capacity can be judged with fair accuracy, as it affects prognosis. A kidney which does not allow water to permeate its epithelial lining is daming back not only normal end-products of protein metabolism but adventitious products which are abnormal and which are responsible for the irritation. Clinical evidence will soon appear.

A third interpretation may also be advanced. The irritation causing such a marked degeneration is most intense and in the quantitative estimation of the albumen we have a rough measure of that intensity—at least in so far as it applies to the parenchyma. While the fact is not often stated in words, the quantitative estimation of the albumen is relied upon during recovery to indicate the decline of the irritation and histological recovery of the secreting cells. As the irritation ceases the kidney elements resolve and the albumin and casts gradually disappear.

The causes of an acute degeneration of the renal parenchyma in childhood may be diverse, such as diphtheria, entero-colitis, etc., but the interpretation is not affected thereby. The same conclusions are permissible in adult middle life provided in the previous history of the patient there has been no indication of renal irritation other than that which accompanies ordinary wear and tear. Fortunately we have recourse to a condition which arises at this period, which gives a perfect illustration of the premises advanced, and which is sufficiently acute and within the experience of all to be generally accepted as bearing them out. I refer to the nitrogenous eclampsia of pregnancy. Whatever the cause of this disorder, the clinical manifestations are remarkably constant in their sequence. There is first the rise in blood pressure, usually prophesying the appearance of albuminuria by two weeks, unless the process is very acute. These symptoms subside in the reverse order after emptying the uterus.

For purposes of emphasis, the interpretations of albuminuria, in a child suffering from acute nephritis from whatever cause, and under the conditions indicated, will resolve itself into the following:

(1) The degree of albuminuria is a rough index of the parenchymatous degeneration without specifying the damage to the interstitial tissue.

(2) It is also a rough measure of the decrease in functional capacity.

(3) By the amount of albumen in the urine, the degree of irritation sustained by the renal parenchyma may be estimated with fair accuracy.

The continued use of a classification based on histology has fixed mental images which spring into mind as such terms are employed. Mere usage and repetition is responsible. The profession is apparently not open to conviction on the point that aside from the acute degenerations of childhood, by no method of examination known, and least of all by examination of the urine, can the histological appearance of a diseased kidney be surmised. Some years ago Cabot wrote a convincing article on this point in which it was shown that various renal changes were found at autopsy of which there was no suspicion during life. He also found that there was no characteristic urinary changes corresponding to definite pathological conditions. Furthermore, as shown in the introductory chapter, there is no definity in the pathology of the kidney, especially in these chronic conditions of which we are speaking, and this is shown by the attempts to classify kidney diseases on a basis of morbid histology, few of which agree. There are no "pure types." To speak of an interstitial nephritis does not exclude the absence of parenchymatous change but simply means that scar tissue overgrowth is the predominating feature.

Aside from the fact that observation has shown the impossibility of making such deductions, there are theoretical consideration which lead to the same conclusion. It is hardly to be expected that the kidneys of an adult who has been a heavy meat-eater and coffee-drinker and who has been subjected to numerous acute and chronic infections of varying kind and degree would not show some change, regardless of whether albumin is in the urine immediately prior to death or not. Excepting physiological over-work, the "nephro-toxines" in doses sufficiently large to be irritating and sufficiently minute to fall short of causing diffuse epithelial lysis show remarkable specificity in action. Each has a chosen area in the renal system for excretion and in the passage through produces characteristic localized irritation.

The factors which determine the nature of the histological change are the character and intensity of the irritation and the length of time over which the action extends. The various influences to which the kidneys are subjected in the course of a human life, the exquisite specificity of the bacterial toxines and products of sub-oxidation, and the varying time of exposure, all tend to destroy our confidence in the urine as a guide to histological pathology as it affects the kidney. The interstitial overgrowth, starting during diptheria at five years of age, still persists at forty-five years. The mild parenchymatous irritation resulting from the excessive habits of the third decade is reflected in the scar tissue found at fifty. Abundant evidence to substantiate these opinions may be found in literature dealing with the experimental nephritides.

I have purposely emphasized this point because of the widespread conviction to the contrary which still exists. As has been stated, however, the histological appearance of the kidney is of precious little moment to the clinician. His interest and that of his patient lies in what it can do, and there is every evidence that urinary examinations will aid little in the determination of functional capacity. Continued physical comfort is not incompatible with urines of high or low specific gravity or albumin content. Urines of high specific gravity, containing much albumin, of course, mean a low factor of safety but how low can only be guessed. Our attention has been so fixed on *excretion* as applied to Bright's disease that the really essential thing, the determining factor of uremic symptoms, has been entirely ignored, viz., elaboration of substances, which when damed back, produce the uremia; the causes for their elaboration and how best they may be controlled.

If, then, in the chronic nephritides of adult and late life, the albumin and cast content of the urine does not indicate the histological change in the kidney substance, and does not indicate even so roughly the functional capacity of the kidney, is it possible to show with any degree of certainty, that the quantity of albumin is a rough measure of the parenchymatous irritation taking place at the time the examination is made? I believe that this interpretation is the correct one and that it will be found acceptable on clinical evidence alone.

Before detailing this evidence it appears advisable to ask for some latitude in expression. The words "always" and "invariably" cannot yet be used in the biological sciences, or at least only on rare occasions. Not that definite causes do not always produce definite effects, for they undoubtedly do; and the relationships are undoubtedly as precise as in physics. But we do not as yet know *all* the factors which tend to produce the effects, and until we do (this knowledge will come in time), it will be necessary to content ourselves with general laws to which there will be apparent exceptions. Furthermore, it is evident that if the examination is carried too far we shall fall into the error of over-analysis which we are endeavoring to avoid. It will not be possible, for instance, to take up the question of albumin excretion from the standpoint of experimental nephritis, tending to show the segment of the renal system responsible for its occurrence. That is a refinement which is of little value from a clinical standpoint. There are other phases of the subject which might be examined with greater profit, but which will not be touched upon owing to lack of space. It should be said, though, that we are not yet sure of definitions. It is by no means certain as to just what is meant by "irritation." If the standard given in the first article be accepted, viz., disturbance in the chemico-physical equilibrium of the cell, some provision must be made for that manifestation of chronic irritation which is exhibited as interstitial overgrowth and contraction, and which apparently always accompanies mild parenchymatous irritation covering a long period of time.

The statement that roughly the quantity of albumin in the urine is a measure of the irritation progressing at the time the examination is made, finds confirmation first by analogy, and secondly by diseases which approach the conditions of experimental nephritis. It has been shown that in childhood, during the course of an acute exanthem, the quantity of albumin is such a measure, and that as a manifestation of irritation it is continuously used for that purpose. Following acute nephritides in adults, we rejoice to see the albumin disappear, for whatever the cause, the likelihood of an acute uremia is lessened in proportion. If the same conception is carried into the field of the chronic nephritides in adults we find no exceptions to the rule. The trace of albumin which accompanies lead poisoning, hyper-acid urine, milder infections, jaundice, ether or chloroform poisoning disappears when the cause of the irritation is removed. It can therefore be said with confidence that albumin in the urine means irritation of the parenchyma of the kidney, and that the quantity present is a rough measure of its intensity, for we know of no exceptions to this rule. Nor is it permissible to say that the rule does not hold because the cause cannot be found. Causes, sufficiently diverse, are known clinically to establish the premise.*

This leads us again into the field of definitions. No precise meaning has been assigned to the word "albuminuria." If from 1 per cent to 10 per cent albumin is found in a specimen of urine it is assumed that this is serum-albumin and that it is primarily derived from the blood. Usually, other albumins are not taken into account, for the quantity of serum-albumin is relatively so large that the diagnostic interpretation is without question. The presence of a little mucin or nucleo-albumin in such a mixture is of no import. If, however, albumin is precipitated in amounts under 1 per cent (*i. e.*, a trace), questions immediately arise as to the character of the albumin precipitated, or the action of the reagents used. If the "trace" of albumin is to be rightfully interpreted, it is important to know that the trace is of renal origin, and that a low grade parenchymatous change is progressing.

In amounts so small that neither heat nor nitric acid will yield reaction, the presence of serum-albumin is detected by the picric-citric acid test of Johnson and Esbach or the potassium ferrocyanide test. Neither of these reagents precipitate mucin or nucleo-albumin. These tests eliminate the commonest sources of error, especially if corresponding casts are found. They precipitate the albumoses and peptones* and some other types of albumins encountered in the urine. None, however, are of a type which should be ignored. The final conclusion as to the significance of the trace can best rest on the supporting evidence furnished by the presence of casts, and will in many cases incontestably show the source of the albumin and indicate the reality of the renal irritation.

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* The possibility of progressive renal irritation without albuminuria and the possibility of its diagnosis should be kept in mind. Some years since, Henry T. Brooks showed that the presence of a moderate number of fine fatty casts indicated contracting kidney, irrespective of the presence of the albumin-trace or of low specific gravity. I have many times had occasion to check Dr. Brooks in this statement and have found if the general physical examination at the time the urinary examination was made did not bear out conclusions he formed as the result of urinary examination, that the subsequent medical history of the patient did. Diagnosis of that syndrome which for clinical convenience is termed contracting kidney should be possible long before the specific gravity begins to drop or the blood pressure go up; especially if the patient is under the continued observation of the family doctor.

The persistence of a trace of albumin in the urine accompanied by characteristic casts becomes of as much real importance to the patient and the clinician as the more urgent 5 per cent albuminirias. The two signify the same process, the difference being only in degree and not in kind. It is of supreme importance in clearing up a case of acute nephritis, or eclampsia, that treatment be continued until the final trace is removed and that the urine be examined for months to see that it has not returned. It is quite as important in the routine of examinations that the rougher tests for albumin being negative, one of the more delicate reagents be employed, and the source of the irritation then be discovered and removed.

It is therefore certain that (1) In the acute nephritides of childhood and adolescence, the quantity of albumin in the urine is a rough index of the perenchymatous degeneration present, of the functional capacity of the kidney, and especially of the intensity of the irritation. (2) As the result of a classification based on histological change, clinicians have gradually transferred these conceptions to the more chronic types of adult life, which has been proved to be fallacious. Most infections of acute or chronic types, of intense or of milder grades, leave scars in the kidney substance, and to interpret certain urinary findings as indicating typical histological changes in the kidneys is not permissible. Nor is it of interest to the clinician, whose interest lies chiefly in functional capacity. (3) It has also been shown that the quantity of albumin in the urine is not necessarily an indication of functional activity in the chronic nephritides of adults. A badly damaged kidney, with factor of safety reduced to zero and little or no overload will yield only a trace of albumin on examination, and possibly none. (4) The real interpretation of the albumin in the urine is that it is a measure of the intensity of the irritation progressing in the parenchyma at the time the examination is made. Of itself, it gives no clue to the character of the irritation. That this index is a sensitive one, however, is shown by various clinical conditions where, the relationship of cause and effect is known and acknowledged. It is certain that the presence of a trace of albumin is as significant clinically as the greater quantities. It means *always* mild renal irritation. From a subject with no previous history of kidney trouble, its significance lies in the fact that some cause is operating which, acting as an overload, has produced sufficient reduction in the factor of safety so that the cellular equilibrium of the renal epithelium has a disturbed balance. It should receive the same precise attention which characterizes the attention devoted to higher amounts of albumin, and it should be as conscientiously sought for. The fact that it is less urgent is not an excuse for failure to heed.

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* These are of metabolic or digestive origin.

# EDITORIAL

## THE BELGIAN RELIEF FUND.

JUST as, after the San Francisco disaster, the physicians of this country hastened to the relief of their destitute confreres whose homes and equipment had been destroyed, so now the stricken profession in Belgium appeals for help. Physicians are peculiarly dependent upon the community and thrive or suffer with its prosperity or adversity. Just now, when hunger, want and disease are greatly increasing the need for medical care, the doctors are in as sorry a plight as their patients. However anxious they may be to help, the means are lacking and can hardly be supplied by any of the warring nations whose need for medical service and supplies is all consuming.

America must help and already the Central Committee reports a generous response. Physicians from all over the country have contributed freely, but more is needed. Although a list of individual givers has been published and a request has been made that the names be printed, it seems debatable whether this is necessary. The gift can hardly be enhanced by what may be construed as ostentation, and the moderate giver may be discouraged if his mite is publicly compared with the larger sums of those better able to contribute generously.

Gifts to the fund may be sent to Dr. F. F. Simpson, Jenkins Arcade Building, Pittsburg, Pa.

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The popular enthusiasm evidenced by the donations of food, clothes and money, not only to Belgium, but to the belligerent nations as well, is worth considering from another angle. Workers in the field of home charities of all kinds have dreaded that the gifts abroad might curtail the income for the needs of our own poor who have been greatly increased by adverse economic conditions; a fear that has been substantiated in at least one instance. The call for Belgian relief in one state brought out an immediate and substantial response, while a concurrent effort in behalf of a home missionary fund showed a decided falling off. There is doubtless a considerable class of conscientious people who give systematically and intelligently, but there is also a very large number who, swayed by popular hysteria, give where it will make the most show. Possibly those ladies who knit socks in public or spend weeks in unaccustomed sewing on a flannel shirt for a wounded soldier are persuaded that they are doing a good work for a noble cause, but if they would pay some seamstress the money they waste for extravagant work bags it would be much more to the point. The energy they waste could be utilized with splendid effect by the various organized charities. But hysteria started the Crusades and maybe attempted the Tower of Babel, so what availeth it for a man to protest? H. G. W.

## THE FEDERAL DRUG LAW.

BEGINNING March 1st it will be obligatory for each physician in the United States to register with the Collector of Internal Revenue of his district, pay an annual tax of one dollar and write prescriptions in conformity with the law if one wishes to use any preparation of opium or coca. Druggists will not fill your prescription unless it conforms with the requirements, and a record must be kept. This law, "Public, No. 223, 63rd Congress, H. R. 6282," provides that on and after the first day of March, 1915:

> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after the first day of March, nineteen hundred and fifteen, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away opium or coca leaves or any compound, manufacture, salt, derivatives, or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of business, and place or places where such business is to be carried on: At the time of such registry and on or before the first day of July, annually thereafter, every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate of $1 per annum.
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> SEC. 2. That it shall be unlawful for any person to sell, barter, exchange, or give away any of the aforesaid drugs except in pursuance of a written order of the person to whom such article is sold, bartered, exchanged, or given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue. Every person who shall accept any such order, and in pursuance thereof shall sell, barter, exchange, or give away any of the aforesaid drugs, shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by any officer, agent, or employee of the Treasury Department duly authorized for that purpose, and the State, Territorial, District, municipal, and insular officials named in section five of this Act. Every person who shall give an order as herein provided to any other person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order, shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers, agents, employees, and officials hereinbefore mentioned. Nothing contained in this section shall apply—
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> (a) To the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon registered under this Act in the course of his professional practice only: *Provided*, That such physician, dentist, or veterinary surgeon shall keep a record of all such drugs dispensed or distributed, showing the amount dispensed or distributed, the date, and the name and address of the patient to whom such drugs are dispensed or distributed, except such as may be dispensed or distributed to a patient upon whom such physician, dentist or veterinary surgeon shall personally attend; and such record shall be kept for a period of two years from the date of dispensing or distributing such drugs, subject to inspection, as provided in this Act.
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> (b) To the sale, dispensing, or distribution of any of the aforesaid drugs by a dealer to a consumer under and in pursuance of a written prescription issued by a physician, dentist, or veterinary surgeon registered under this Act: *Provided, however*, That such prescription shall be dated as of the day on which signed and shall be signed by the physician, dentist, or veterinary surgeon who shall have issued the same: *And provided further*, That such dealer shall preserve such prescription for a period of two years from the day on which such prescription is filled in such a way as to be readily accessible to inspection by the officers, agents, employees, and officials hereinbefore mentioned.
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> The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall cause suitable forms to be prepared for the purposes above mentioned, and shall cause the same to be distributed to collectors of internal revenue for sale by them to those persons who shall have registered and paid the special tax as required by section one of this Act in their districts, respectively; and no collector shall sell any of such forms to any persons other than a person who has registered and paid the special tax as required by section one of this Act in his district. The price at which such forms shall be sold by said collectors shall be fixed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but shall not exceed the sum of $1 per hundred.
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> SEC. 8. That it shall be unlawful for any person not registered under

the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs; and such possession or control shall be presumptive evidence of a violation of this section, and also of a violation of the provisions of section one of this Act: *Provided,* That this section shall not apply to any employee of a registered person, or to a nurse under the supervision of a physician, dentist, or veterinary surgeon registered under this Act, having such possession or control by virtue of his employment or occupation and not on his own account; or to the possession of any of the aforesaid drugs which has or have been prescribed in good faith by a physician, dentist, or veterinary surgeon registered under this Act; or to any United States, state, county, municipal, district, Territorial, or insular officer or official who has possession of any said drugs, by reason of his official duties, or to a warehouseman holding possession for a person registered and who has paid the taxes under this Act; or to common carriers engaged in transporting such drugs: *Provided further,* That it shall not be necessary to negative any of the aforesaid exemptions in any complaint, information, indictment, or other writ or proceeding laid or brought under this Act; and the burden of proof of any such exemption shall be upon the defendant.

Sec. 9. That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than $2,000 or be imprisoned not more than five years, or both, in the discretion of the court.

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The portions of the law quoted above are those that are of especial interest to physicians who, as usual, have to bear the brunt of the regulation. The Congress of the United States is not afraid to saddle a special tax upon physicians and retail druggists, to surround them with restrictions against the use of drugs which they are especially trained to employ, but it does fear the jobbers and the dealers in nostrums and the commercial houses that are doing so large a part of the real damage through proprietaries composed largely of opium and cocaine. As in every other law which has been passed recently regulating the traffic in drugs, proprietaries are distinctly and formally excluded so that the unscrupulous dealer in preparations containing opium and cocaine has only to state on his label that the content of his product is within the legal amount and he can sell broadcast without restraint. We understand that the prime object of this new law is the control of the vicious drug trade, especially in the rural districts in the South where the cocaine habit has grown to appalling proportions, but what good is to be gained if the physicians, who are not the prime offenders, are the only ones to be restrained, while any unscrupulous dealer, under the guise of a cough syrup, catarrh cure, or what not, can put up a compound containing more narcotic than the average physician ever prescribes, which he can peddle at will to the very people for whose protection the law is designed? The action of the Congress of the United States reminds one of the fat incompetent policeman who chastises the small unoffending urchin and turns his back upon the burglar who is too strong for him to tackle.

It is time that the physicians of this country awoke to the fact that their lack of organization and supineness is leading them to a point where their entire services will be eventually regulated by government ukase. Already the more thoughtful have recognized the signs of the times, but the general bulk seem much more interested in attention to petty things such as the exploitation of personal grievences and permit their little jealousies or their little personal ambitions to blind them to the movement which will eventuate in complete government control unless the profession takes the matter into its own hands and organizes its own regulations for its own good. H. G. W.

# Society Transactions

## TRANSACTIONS OF THE KINGS COUNTY MEDICAL SOCIETY.

*Regular Meeting, May* 19, 1914.

The President, Dr. J. Richard Kevin, in the Chair.

### Symposium on Intestinal Stasis.

(See pages 1 to 12.)

Dr. Anthony A. Rutz, in discussion, said:—"There is a little point which I have observed in reference to the subject of intestinal toxemia which might be of some interest.

"It is the importance of examining and comparing the morning and evening urine in testing for indican in order to determine the presence and degree of intestinal toxemia in cases of abdominal ptosis. If we examine the morning urine (that voided upon rising) of a well marked case of abdominal ptosis we will very frequently find either a normal or only a slightly increased indicanuria. If, however, we examine the evening urine of the same patient after he has been up and about a marked indicanuria will usually be found. The average proportion of indican in the morning urine to that in the evening urine was found to be as one to thirty.

"While this marked difference may in part be due to increased peristalsis yet, I believe, the main cause is the influence which the erect position exerts through gravity upon the relative position of the segments of the intestine.

"It is evident from this fact that the morning urine is no guide to the toxemia, yet it is frequently examined for this purpose and mistakes made in this way. It is the evening urine which indicates the effect of the ptosis upon the action of the intestine and determines the degree of stasis and resulting toxemia.

"Moreover, the difference between the morning and evening indicanuria helps us to determine to some extent the nature of the cause producing the stasis. If there is a marked difference we can infer that the chief cause of the stasis is the ptosis and that the case is more or less favorable for non-operative treatment. If on the other hand there is little or no difference between the amount of indican in the morning and evening urine we might conclude that there exists a constricting band surrounding the intestine or some intra-intestinal lesion and the case requires operative treatment.

"I mention this little point because I believe it to be of some practical value and as far as I know it does not appear in any treatise upon this subject."

### "X-Ray Diagnosis." (Lantern slides and demonstrations.)

*By Charles Eastmond, M.D.*

In the time at my disposal (only ten minutes) I cannot begin to cover the subject of the radiographic diagnosis of intestinal stasis, and I preferred simply to bring a number of lantern slides to demonstrate to you some of the conditions as we see them on the X-ray plates.

Dr. Edward E. Cornwall, in opening the discussion, said:—"Dr. Pilcher made a remark about the prevalence of the popularity of the general use of the term intestinal stasis. I think that term has been used so much of late, both in medical talks and medical literature, that it has become somewhat misunderstood and implies perhaps an experimental beginning. I think, too, from the way people talk, it conveys to many people's mind an idea that it is theoretically equivalent to intestinal toxemia. That, I think, is incorrect, because they are two very distinct things. Stasis is only one of the many factors of the latter condition. We find many cases of intestinal stasis without intestinal toxemia and we find many cases of intestinal toxemia without stasis.

"In this matter of toxemia there are things outside of the intestine to be considered that act perhaps as a controlling factor, and one of them is the liver, The more we know of the physiology of the liver (and we have learned considerable from the work which has been carried on in recent times), the more we realize how important is that nitrogenous metabolic function.

"I think treatment can be summed up very well in diet, hygiene and exercise; also, cathartics may be necessary. Of the newest, I want to call your attention to Russian oil. I think that Lane's enthusiasm has been used to push it ahead, but when that dies out I don't think it will be so popular."

Dr. Eliza M. Mosher, in discussion, said:—"The number of cases of enteroptosis is very great, as we are finding from the patients coming to our office.

"The first thing to do in these cases is to make a diagnosis. That our patients cannot all have an X-ray examination because of its expense, is another thing; so the thing to do is to have a method by which we can easily and quickly and certainly make a diagnosis.

"I want to recommend a method of auscultatory percussion that I have used for a long time and to say that the beautiful thing about it is that after making a diagnosis one can prove it, which we cannot always do in all our work.

"It seems to me it is of the very greatest importance after having found a ptosis to replace it and prove to ourselves that the patient did have one and by proving to the patient that she had it by relieving it.

"I have gotten up a form of exercise of value, that of having the patient on her back with knees flexed and letting her drop out with one knee flexed out, then lifting it to the opposite side to the tops of the stockings so that the thighs strike each other, then elevate that foot to the opposite shoulder and put it down again. Three moves of this sort throw up all the abdominal contents. I have my patients perform that exercise two or three times a day, three to six times on each side, and some of them recover without putting on a belt.

"There is one thing further which I would like to touch upon and that is this: it is of the utmost importance, in my opinion, to replace the abdominal viscera before fastening it down. I think that point has not been brought out fully enough in our literature and it can be done by this method.

"This new exercise does not in any way interfere with the pelvic organs. On the contrary, it replaces the pelvic organs very remarkably.

"One thing more has been worked out by Dr. Eastmond in a case where he made a radiograph for me, and that is this: we cannot put a belt on a person who has a real Lane kink. They cannot bear the pressure of a belt."

Dr. David C. Eccles, in discussion, said:—"There are a few points that I failed to hear touched upon tonight that I think it would be well to consider. One is the use of cathartics that is so fully adopted by the community at large and by the doctor prescribing them. Everybody everywhere in all civilized communities is using cathartics to an enormous extent. I think if you will watch your patients you will find this curious feature about the toxemia—that it is the patient that takes cathartics most frequenly that suffers most. I think you will find also that he suffers most severely when he is taking them most freely and the stools are loose. You will find, I think, in many cases, if not in the majority, that that is the condition. At least, the experience which I have had it points in that direction. The constipated man is not the man that is filling the blood with poison. It is the man whose bowels are loose, for if you will examine bacteriologically you will find the difference in the quantity of bacteria in the two is tremendous and that there are very few in the solid fecal matter. There is a tremendous number in the loose fecal matter.

"The constant use of cathartics removes the coating from the intestinal tract.

"The entire intestinal tract in the upright position is pressing down into the pelvis, naturally making bands or tortions. If there is infection (as there always is) the bacillus coli communis is always there. There are always streptococci there and there are always staphylococci, but the bacillus coli communis more than anything else, is the great danger to the human family and the intestinal tract is incessantly filled with this disease-producer, this giver of work to the surgeon. The great part of the surgeon's work comes from the infection of local spots by the bacillus coli communis. This organism in the normal condition of the intestine does no harm. We are in the same fix as we are with the infectious diseases. We have to go by natural selection. It leaves everything with loose ends at the top and as soon as any change occurs that is abnormal, the bacillus coli communis becomes your bitterest enemy and produces the trouble in all these patients." Discussion stopped as Dr. Eccles' time had expired.

Dr. Sidney H. Gardiner, in discussion, said:—"I would like to present a few points on this paper, which is certainly very absorbing.

"I have faith in the mineral oil, first, because it is not a purgative and, second, because it is not a culture medium. It does not act as a purgative that should be taken to prevent constipation. It is preferably taken before meals in such quantity as each individual may find most desirable. It passes down into the intestinal canal, lubricates the passage of the food and prevents the accumulation of particles of matter descending through the intestinal canal and in that manner it acts in preventing constipation. The experience I have had with it makes me an advocate of it to the highest degree."

Dr. James P. Warbasse, in discussion, said:—"I feel, Mr. Chairman, there is this to add to what has been said tonight. Surely, there are two classes of cases with intestinal adhesions, one class not requiring operation for the reason that the adhesions are of such a character that they will ultimately dissolve. We are all familiar with the picture in the abdomen—widespread adhesions, particularly after some recent inflammatory condition, especially in the pelvic region, and opening such an abdomen a few years later, as many of us have done, we fail to see any signs of adhesions whatever. This is a common experience which every surgeon has had. Then, on the other hand, we have cases such as were illustrated by the last three pictures shown by Dr. Pilcher's slides. I believe those slides are quite inaccurate, however. They look as though those adhesions were almost cartilaginous (Dr. Pilcher's artist used a rather heavy pencil, I think), but still as heavy as those adhesions look, it is obvious to any one even with a mechanical sense, that that condition of angulation and fixation of the bowel can be relieved only by dividing those adhesions and placing the intestines as nearly as possible in their normal condition.

"It is an interesting thing that when we divide adhesions between the intestines, adhesions again form and the expedients for preventing the reformation of adhesions fail. They are not satisfactory. Adhesions form again, but we get results for the reason that the patient is placed in a quiescent position with the intestines or the stomach or whatever organs we are dealing with so placed that when the adhesions reform they are less vicious than they were before, and when the condition is so pronounced—when the displacements are so pronounced that we cannot depend upon position alone to correct the displacements, then we must resort to artificial fixation, which Dr. Pilcher has so admirably illustrated."

Dr. Henry F. Graham, in discussion, said:—"I took the liberty of bringing with me a lantern slide and would like to be permitted to show it for a second. It illustrates in a composite way the different mechanical causes of stasis. Of course, you cannot show in a diagram the functional part of it. It is gastro-intestinal stasis and not intestinal alone.

"In discussing this question of intestinal stasis I want to approach it from the standpoint, first, of one doing general practice and, second, from the standpoint of one witnessing a great deal of surgery on these cases. I haven't done much of it myself, but have done a little.

"It seems to me that about one-fifth of the patients that come to us in the office can be benefited by attention to their diet and bowels and of this fifth 95 per cent will be improved and that medical attention will be all that they will need. The other 5 per cent, perhaps, in order to get relief, will have to have surgery and it is our business to try and find out who are the 5 per cent, and the only way we can do that is by careful attention to details. We have got to learn all about them. We have got to learn what their diet is. We have got to learn their mode of life even to the most intimate details. The only way we can do that and help them is to have things put down in writing. You cannot talk it to them. Have them write down on a piece of paper the things they are to eat and have them bring it back to you meal by meal, week by week. We must write it down. Tell them what to have for breakfast, dinner and lunch in the evening. Write out the vegetables they are to eat, such as celery, olives, asparagus, onions, squash, string-beans, etc., and when they bring back the list see if they have eaten those things. We must teach them. You've got to see that they do those things and you must also keep them on a low-protein diet. In many of these cases, most of them coming to the office, you get results by this method of treatment.

"I have tried out agar-agar and it seemed to me that it took the place of good food. It seemed to me that the patients lost weight on it, so I stopped using it and I have tried out other things and have come back to diet and Russian oil.

"When it comes to surgery we can get good results. As to Rovsing's operation and the Coffee operation: I have seen two Rovsing's where the results have been good, and the same is true of the Coffee operation, the results in which have also been good.

"As has been said tonight, this is only in the formative stage—both medical and surgical treatment, and it is up to us to get right down to hard tack, and try and analyze these cases, and in the years that come learn more about them."

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

### FEBRUARY, 1914

### MINUTES OF STATED MEETING, JANUARY 19, 1915.

The President, Dr. Russell S. Fowler, in the chair. There were 400 present. The meeting was called to order at 8.30 P. M., and the minutes of the previous meeting were read and approved.

It was unanimously voted that the reports of officers and committees for the year 1914 be accepted as printed.

*Report of Council.*

The Council reported favorably upon the following applications for membership:

John J. Delaney, 1221 Ave. O; Univ. and Bell., 1909; proposed by R. N. Prentiss; seconded by Membership Committee.

Hyman L. Ratnoff, 447 Saratoga Ave.; Cornell, 1906; proposed by I. D. Kruskal; seconded by Membership Committee.

*Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Joseph Carch, 566 Gates Ave.; Univ. and Bell., 1913; proposed by R. S. Fowler; seconded by Membership Committee.

Onslow A. Gordon, Jr., 71 Halsey St.; L. I. C. H., 1910; proposed by J. R. Kevin; seconded by O. A. Gordon.

Christian Wm. Janson, 949 Bushwick Ave.; Cornell, 1902; proposed by R. S. Fowler; seconded by Membership Committee.

*By Transfer.*

H. Sheridan Baketel, 570 Pacific St.; Dartmouth, 1895; transfer from M. Soc., Co. N. Y.

*Applications for Membership.*

Applications for membership were received from the following:

John E. Daugherty, 624 11th St.; Barnes Med. Coll., 1902; proposed by Membership Committee; seconded by Membership Committee.

John H. Isquith, 674 Bedford Ave.; Cornell, 1909; proposed by E. K. Tanner; seconded by N. T. Beers.

Henry W. Kemp, 855 Fresh Pond Road; Univ. Toronto, 1906; proposed by L. J. J. Commiskey; seconded by Membership Committee.

Wm. Francis McKenna, 36 Clark St.; L. I. C. H., 1913; proposed by R. F. Barber; seconded by A. Murray.

Abraham Ravich, 820 Nostrand Ave.; P. & S., N. Y., 1912; proposed by I. D. Kruskal; seconded by J. Linder.

The inaugural address of the President was received with applause.

*Scientific Session.*

Paper: "Foreign Bodies in the Trachea, Bronchi and Esophagus." (With lantern slide demonstration.)
By Robert L. Moorhead, M.D.
Discussed by Lefferts A. McClelland, M.D.

Paper: "The Ear in Its Relation to General Medicine."
By Charles N. Cox, M.D.
Discussed by Stephen H. Lutz, M.D.; Lefferts A. McClelland, M. D.

Paper: "Twilight Sleep, Statistics of 1,000 Cases in America."
By Ralph M. Beach, M.D.
Discussed by John O. Polak.

*Miscellaneous Business.*

The report of Dr. William J. Cruikshank, Chairman of the Committee on Legislation, was received with cheers.

Dr. J. Richard Kevin moved that the Society adopt the suggestions offered by the Committee on Legislation and that the committee be empowered to hold a joint meeting of physicians and legislators in the building of the Society. Unanimously carried.

It was moved and carried that the Society approve the action of Lewis K. Neff, Chairman of the Legislative Committee of the Medical Society of the State of New York in supporting a bill to prevent the sale of bichloride of mercury without the prescription of a registered physician.

Meeting adjourned at 11.50 P. M.

Burton Harris, M.D., *Secretary.*

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# SOME OF THE RELATIONS OF THE EAR TO GENERAL MEDICINE.*

**Charles N. Cox, M.D.,**
Brooklyn-New York.

A COMPREHENSIVE knowledge of the deleterious effects which general diseases and affections of the various organs of the body may produce upon any special organ is indispensable in determining the diagnosis, prognosis and treatment of the local manifestations within that organ.[1]

A specialty should not be regarded as a thing apart—a sort of an appendage; it should take an active part in all the problems with the solution of which general medicine is concerned.[2]

An active co-operation between general medicine and the various specialties is fraught with great advantages to each. The relations of the ear to general medicine are manifold. In the time allotted to the subject tonight, it will only be possible, in a cursory manner, to touch upon some of the more important ones.

The close relations between the ear and the *upper air passages* are so obvious as to justify but a mere allusion to the fact.

The eustachian tube represents the path by which disease spreads by continuity from the nose and pharynx to the ear. Pain in the ears is a symptom commonly observed in various diseased conditions of the pharynx and larynx. For instance, in tonsillar inflammation, or more particularly peritonsillar inflammation (quinsy), pain referred to the ear is almost always present to a distressing degree. But an examination of the tympanic membrane rarely reveals any inflammatory disturbance of the tympanum. The pain is neuralgic, due to nerve pressure about the pharyngeal end of the eustachian tubes. Malignant disease of the tonsils likewise gives rise to aural pain. So, also, does malignant disease of the larynx. A very common source of otalgia is tuberculosis of the larynx.

The explanation of these reflex or referred pains lies in the fact that the larynx and pharynx are supplied with sensory nerves which are branches of the vagus, and the external auditory meatus receives sensory fibers from the same trunk through the auricular branch. This reflex action is often reversed—as, for instance, when a speculum is introduced, a fit of coughing will frequently be produced. And, furthermore, certain sensitive areas in the meatus are occasionally the source of a constant and intractable cough—a so-called *ear-cough.*

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* Read before the Kings County Medical Society, January 19, 1915.

The writer has seen some cases of middle ear suppuration attendant upon or following *pneumonia;* but there is no reason to suppose that these phenomena have any specific relation to the pneumonia. Wreden,[3] however, has pointed out the frequency of ear anomalies observed at the autopsy in infants who died of pneumonia, presumably the catarrhal form. And Rasch[4] examined the bodies of 43 children dead of bronchopneumonia and in 42 instances found inflammatory conditions in the ears, which in 30 consisted of middle ear suppuration.

These observations would appear convincing, but we must remember that the young organism is predisposed to suppuration of the middle ear by any disease which seriously interferes with its nutrition, whether it be catarrhal pneumonia or any other affection. Infection in the opposite direction is a possibility. Aspiration of pus, with its contained bacilli, from the middle ear, by the way of the eustachian tube and pharynx, is sometimes followed by bronchitis and bronchopneumonia.

Tinnitus aurium is a frequent symptom of disease of the *heart and blood-vessels,* and of anemia or hyperemia of the vascular system within the ear.

The noises caused by heart disease and aneurism are usually described as intermittent or buzzing or soughing in character.

Vertigo and tinnitus are frequently complained of by patients suffering from *arteriosclerosis.* And these are symptoms not to be lightly regarded or loosely attributed to ear disease alone.

The aural effects of cardiovascular disease are due, in the main, to blood pressure changes within the labyrinth.

Functional disturbances in the organ of hearing produced by disease in the *central nervous system* are either loss of hearing or of the equilibrium, depending upon the paths of involvement—whether they be the cochlear or vestibular nerves. When the trunk of the auditory nerve is diseased, both hearing and equilibrium are affected.

The differential diagnosis of entotic disease and aural disturbances produced by disease of the central nervous system is involved with technicalities, the discussion of which would not be profitable at this time. Suffice it to say, we may have, in disease of the auditory nerve paths, either deafness and tinnitus or vertigo, with or without nausea and vomiting. These symptoms—deafness, tinnitus, vertigo and nausea—are collectively known as Ménière's symptom-complex. It was formerly customary to speak of *Ménière's disease* because Ménière had first observed these symptoms in a case of sudden hemorrhage into the labyrinth. But it is now known that this symptom-complex applies to the most various diseases of the nervous hearing apparatus.

The importance of aural suppuration in the production of such intracranial diseases as meningitis, brain abscess and sinus thrombrosis cannot be exaggerated. Most cases of meningitis, extradural abscess and cerebral sinus disease are the results of suppurative processes within the middle ear. And a very large proportion of brain abscesses are due to the same cause.

*Neurasthenia* and nerve-tire are factors of importance in the management of patients whose hearing is impaired. The hearing power is always diminished when the nerve forces are exhausted or overworked. And, on the other hand, "the fatigue of deafness," to which attention has been called by Blake,[5] may become a very important factor in the cause and persistence of neurasthenia. The everlasting strain of trying to hear with a badly impaired auditory function is such as is not easily appreciated by those who have perfect ears.

The influence of disease of the *stomach and intestinal canal* on the ear is probably not great.

Tinnitus of an evanescent character is sometimes observed as a concomitant of hyperacidity, or sour stomach. The ingestion of food may be seriously interfered with in any disease of the ear which involves the articulation of the lower jaw, so that mastication, or even opening the mouth, becomes painful or impossible. Such disturbances occur most commonly in otitis externa, with furuncle on the anterior wall of the meatus and infiltration of the parts about the joint.

Dizziness, often complained of in so-called biliousness or other disorders of the digestive tract, is due to toxic effects upon the semicircular canals of the internal ear.

There is one part of the digestive system between which and the ear there is an undoubted nervous connection—the teeth. It is a matter of common knowledge that a carious tooth will produce severe earache. The otalgia is frequently so predominant in its severity as to induce the patient to seek relief from the otologist, thinking that the primary trouble is in the ear. In fact, in many instances, he is not even aware that he has dental disease.

That dentition, however, can ever be the cause of middle ear suppuration, as it is widely believed, especially by the laity, is scarcely credible. It is difficult to conceive how a purulent otitis media could be the result of the physiologic process of dentition, except on the very improbable hypothesis that the inflammatory irritation of the gums was communicated to the middle ear by way of the postnasal space and the Eustachian tube.

Aural disturbances in diseases of the *kidney* are perhaps not so frequent as ocular manifestations. But they occur in many cases of nephritis, and are chiefly characterized by defective hearing and tinnitus aurium. These symptoms are undoubtedly produced by secondary disease of the blood-vessels, and belong in the same category with the phenomena observed in arteriosclerosis.

Uremic patients are sometimes affected with sudden deafness, even in the early stages, previous to relapsing into unconsciousness; and the deafness is often attended with most violent tinnitus.

These functional disturbances are due to increased arterial pressure exerting a paralyzing influence on the sound receiving filaments of the cochlea; or edema of the brain.

Stepanow[6] and Gradenigo[7] have observed cases in which hemorrhages from the ears occurred either vicariously or coincidently with *menstruation.* In most of the cases the organ of hearing had been affected with chronic catarrh, or chronic suppuration, and the power of hearing was more or less reduced during the intervals between the attacks. The hemorrhages from the ear usually occurred on the day before the appearance of menstruation, and, in the cases of menstrual anomalies, on the days on which the menses should have appeared. The amount of blood varied from two drops to quantities greater than that of a normal menstrual flow. The region of the hemorrhage appears to be the tympanic membrane and the external meatus. Hemorrhage is said to have occurred in the labyrinth at the appearance of the menses. At the time of menstruation, tinnitus is often observed. It is probably due to hyperemia accompanying the flow. I have seen a few cases of vicarious or extragenital menstruation from the nose, but I have never witnessed the phenomenon in the ears.

The connection between *pregnancy* and the *puerperium* and chronic catarrh of the middle ear is so generally recognized among the laity that it is given as the cause of deafness in an abnormally large number of cases, but we generally find it possible to demonstrate objective alterations in the ear which cannot possibly be referred to that physiologic condition of the female organism. These auditory disturbances are more likely due to labyrinthine involvement and are no doubt caused by the disturbances in the circulation to which the female organism is subject during the time of menstruation and pregnancy, and to the anemic conditions which follow the puerperal period. McArdle[8] reports the case of a woman with no demonstrable aural lesion whose hearing power was diminished after each of three confinements; and he quotes Baratoux, who reported five cases.

It is generally held that *scarlet fever* plays a more important role in the etiology of diseases of the ear than that of any other disease. The two next in order being influenza and measles.

The most common aural affection attendant upon scarlet fever is middle ear suppuration. From 12 to 15 per cent of all cases of purulent otitis media are secondary to scarlet fever; and when we take into consideration the complications and sequelæ of aural suppuration accompanying scarlet fever, there is ample justification for a considerable amount of attention to the ear during the progress of the disease.

The suppuration begins at a late stage of the disease—during the period of desquamation; and is characterized by a rapid and destructive process which fairly melts away a large portion of the tympanic membrane, and frequently involves the ossicles as well as the bony walls of the tympanum. The mastoid is frequently involved. And when this takes place there is the same rapid breaking down and extensive bone destruction. An early and complete operation upon the mastoid in these cases is advisable for two reasons:

1. It offers a fair prospect of bringing about an early cessation of the discharge, which otherwise has a great tendency to become chronic.
2. With the cessation of the discharge a source of possible infection and danger to other individuals is removed, which otherwise is a potentiality for a considerable but indefinite length of time even after desquamation has come to an end.

In the aural complications of scarlet fever the internal ear is not infrequently involved; which may be due either to an extension of the destructive suppurative process from the middle ear, or to the toxic effects of the disease directly upon the labyrinth.

In *measles,* as in scarlet fever, purulent otitis media usually makes its appearance somewhat late in the disease. Measles is given as the original cause of 5.1 per cent of all cases of aural suppuration.

The otitis accompanying measles is not especially malignant and runs much the same course as any other middle ear inflammation. But many cases of running ears have been neglected, in the past especially; and, since a considerable percentage of these cases is attributable to measles, it so happens that this disease is charged with 4 per cent of all cases of acquired deaf-mutism.

Infiltration with deposit of membrane on the walls of the external auditory canal, eustachian tube or tympanic cavity in *diphtheria* is somewhat rare, but has been occasionally observed. And catarrhal or purulent inflammation of the middle ear is not nearly so common as in scarlet fever and measles. A very few cases of nerve deafness after diphtheria have been reported. They are probably due to the toxic effects of the disease, and belong to the class of postdiphtheritic paralyses.

It is a matter of common observation that *epidemic influenza* is attended with very frequent invasions of the middle ear. The middle ear inflammation is an extension from the nasopharynx, through the eustachian tube. It is extremely rapid and violent in its course, and the mastoid is frequently implicated. The infective process is characterized by a tendency to force itself everywhere and through everything. Thus it is that we have, in aural suppuration accompanying this disease, not only frequent involvement of the mastoid but a large proportion of intracranial complications.

The discharge through the perforated drum-head is bloody for a day or so, then serosanguineous, and eventually purulent.

Gradenigo[9] mentions difficult hearing after influenza, which he ascribes to neuritis of the auditory nerve.

The occasional involvement of the internal ear in *mumps* is as little understood as the more common complications—orchitis, epididymitis and mastitis. The aural complication usually takes the form of labyrinthian deafness, along with other symptoms of Ménière's complex. The deafness is not amenable to treatment, but the tinnitus and disturbances of equilibrium gradually subside. If the disease be bilateral and occurs in early infancy, it is followed by deaf-mutism. Mumps is assigned as the cause of deaf-mutism in 0.5 per cent of the cases according to American statistics.

The ear frequently becomes involved in *typhoid fever*. Suppuration is often unobserved, on account of the somnolent state of the patient. The mastoid is prone to involvement at the very outset of the purulent process in the tympanum.

It is questionable whether aural suppuration is always due to extension from the nasopharynx by the passage of septic material through the eustachian tube, although the dry, bleeding, inflammed condition of the nose and nasopharynx is a matter of common observation; and is probably the most usual etiologic factor.

Deafness, so often manifested in typhoid fever, with little or no apparent changes in the organ of hearing, is usually due to somnolence; and the condition improves as fever subsides.

In a study of 234 cases of typhoid fever by E. H. Holmes,[10] of Boston, 18, or 7 per cent, had acute otitis media when first examined. Six showed bulging with pain. Incision of the tympanic membrane was followed by a drop in temperature. Twenty-one, or 9 per cent, developed acute otitis media while in the hospital. Eleven cases developed during convalescence, characterized by absence of pain (or nearly so), but with rise of temperature. Sixteen developed, during the disease, more or less marked deafness to both air and bone conduction with no apparent ear lesion. Daily examination showed gradual decrease of hearing power, then a stationary period for a few days; followed by increase and finally restoration to normal (5 to 6 weeks). Two of these cases had also loss of vision, and recovered both hearing and sight.

The average duration of discharge after paracentesis was five days—some ceasing within twelve hours. Those which ruptured spontaneously discharged longer and left more destruction of the membrana tympani, and were more frequently followed by mastoid complications. In no case following paracentesis did the opening in the tympanic membrane fail to close.

Tubercle bacilli may find their way into the middle ear through the eustachian tube, through the lymph channels, or the blood currents. The existence of primary tuberculosis of the ear is rather doubtful. Secondary infection of the middle ear, however. does occur with considerable frequency in patients suffering from pulmonary or general *tuberculosis.* It is characterized by a rapid development of caries, destroying the ossicles and walls of the middle ear, with occasional involvement of the labyrinth, sometimes even extending to the walls of the carotid and jugular.

Of course, ordinary, non-tuberculous suppuration is frequently present in the ears of tuberculous patients. And it is by no means to be inferred that a purulent inflammation in the middle ear of a tuberculous subject is of the same nature as that of the general infection.

A significant diagnostic point of tuberculous otitis is the painless course of the disease. Whereas most cases of middle ear inflammation have an initial, painful period of the most agonizing character, until relieved by spontaneous or artificial perforation of the drum-head, a profuse discharge and deafness are about the first manifestations of aural tuberculosis.

The presence of tubercle bacilli in the discharge renders the diagnosis positive, but unfortunately, they are not always easy to find.

Another diagnostic point is multiple perforation of the tympanic membrane. Gruber called it the "sieve-like drum." The only other disease in which the sieve-like perforations occur is diphtheria, in which disease the general clinical picture is entirely different.

Amongst *syphilitic* patients there are many cases of middle ear suppuration, but they are not necessarily, or usually, of a specific nature.

There is a form of syphilis affecting the internal ear, or nervous apparatus, in the tertiary stage, in which the patient suddenly complains of severe headache, loss of hearing and tinnitus, sometimes with vertigo and vomiting.

An analogous involvement of the inner ear also occurs in hereditary syphilis.

Specific treatment of the former is more or less successful, if instituted early, while the prognosis of the latter is unfavorable.

In *diabetes,* as is well-known, the resisting power of the individual is lowered. The subjects of this disease are especially prone to furunculosis. When, therefore, furuncles recur in the external auditory canal with marked persistence, showing a lowered immunity to staphylococcus infection, the possibility of diabetes as a predisposing cause should be borne in mind; and the urine should be examined for sugar.

As a manifestation of *gout,* we are all familiar with the chalky deposits in the auricle, called tophi. Their favorite site is on the helix. Reasoning from analogy, one cannot deny the possibility of *gout* or *rheumatism* attacking the articulations of the ossicular chain within the middle ear. But to make such a diagnosis would be evidence of the rarest acumen—or monumental bluff. Yet, I once saw a patient who had been informed that he had "rheumatism of the incudo-stapedial joint."

REFERENCES.

1. Phillips, Diseases of the Ear, Nose and Throat, p. 406.
2. Friedrich, Rhinology, Laryngology and Otology in General Medicine. (English translation), p. 8.
3. Quoted by Friedrich, p. 50.
4. Quoted by Friedrich, p. 50.
5. *Am. J. M. Sc.,* 1897, cxiii, p. 700.
6. *Monatschr. f. Ohrenh.,* 1885, No. 11.
7. *Arch. f. Ohrenh.,* xxviii, p. 82.
8. *Tr. Am. Ass. Obst. and Gynec.,* 1888,i, p. 182.
9. *Arch. f. Ohrenh.,* xxxvi, p. 141.
10. *Med. Commun. Mass. Med. Soc.,* 1897, pp. 477-502.

## THE CONSERVATION OF THE EARS.

**Claude G. Crane, M.D.,**
Brooklyn-New York.

IN this brief discussion we will eliminate from our consideration all those conditions of the ear due to general arterial sclerosis, traumatism, new growths, congenital malformations, meningitis, syphilis, tuberculosis and those involving the labyrinth.

This will leave for our consideration the inflammations involving the middle ear and the eustachian tube. In both acute and chronic inflammation we may have one or all of the three types or stages, namely—congestion, exudation and purulence or infection. When more than one stage is present in any given case, they always follow in the order named.

The middle ear, and to a less extent, the eustachian tube, can never be subjected to any of the foregoing types of inflammation without some change in the histological structure ensuing. We may not be able to detect the slight changes resulting from one or two mild attacks of congestion or exudation of short duration, but we may be sure that they are present, otherwise the total result of repeated attacks of this character would not be evident; and evident they most assuredly are.

It is this class of ears that I wish particularly to emphasize. They escape attention, and so insidious is the progress that the end result is with us before it is realized. Of the pathologic results of one or more attacks of the severe type of inflammation, we need only say that they are in direct proportion to the severity and duration of the attack. The purulent destructive processes speak for themselves.

In the middle ear, and to some extent in the eustachian tube, owing to the anatomical structure of these parts, the pathologic results are proportionately greater than in any other part of the body. We have a small cavity contained in a hard bone, with its only outlet through the eustachian tube. The delicate chain of ossicles, attached at one end to the membrana tympani, and at the other to the oval window of the labyrinth, with the minute articulations and ligaments, make it very evident that the middle ear cannot be subjected to the mildest degree of inflammation without serious pathologic changes ensuing.

The cavity of the middle ear normally contains air of the same pressure as the atmosphere. The slightest variation in this intra-tympanic pressure is pathologic, and its results are pathologic in exact proportion to the degree and duration of the departure from the normal. This is true of diminished as well as of increased pressure. We may have negative pressure with or without blocking of the eustachian tube. With a normally patent tube we may have negative pressure within the middle ear, as a result of the hawking back of secretion, or swallowing in the presence of nasal obstruction. The negative pressure brought about in this way becomes constant if we have blocking of the tube, as air may be aspirated from the middle ear continuously and the blocking not allow of a fresh supply sufficient to restore the balance of pressure. That is, we may have a blocking of the tube which admits of aspiration, but does not allow air to get into the middle ear. Again air may be forced into the middle ear through an obstructed tube and then become absorbed, thus causing negative pressure. This negative pressure within the middle ear, whether intermittent or constant, causes distinct pathologic changes which are in every instance in direct proportion to the degree and duration of the negative pressure. The blood vessels of the middle ear and membrana tympani become dilated and we have passive congestion which may go on to exudation. The loss of support within the middle ear and the atmospheric pressure on the external surface of the membrana tympani cause retraction of the drum and the ossicles are forced into an abnormal position. If these conditions continue we have chronic thickening of the mucous membrana of the middle ear, and of the membrana tympani, loss of mobility in the ossicles and membrana tympani with the inevitable tinnitus and loss in sound conduction through the middle ear.

Increased pressure within the middle ear may be due to increased air pressure, congestion and exudation with or without infection. We must have blocking of the eustachian tube to have increased air pressure, or an increase of pressure due to congestion or fluid within the middle ear. Air may be forced into the middle ear through a partially blocked tube and cause an increase in air pressure, as previously mentioned. Increased intra-tympanic pressure due to any of the above conditions causes the drum to be forced outward, carrying with it the ossicles. If the pressure continues we have a permanent dislocation of the drum and ossicles, and, if we have infection as well, a destructive process. The extent and the rapidity of these ear changes depend on the character of the pathologic factors at work in each case.

What are the etiologic factors in any of the foregoing conditions? Some pathological condition in the eustachian tube, naso-pharynx or nose is invariably responsible. Often we have more than one pathologic condition to deal with.

The normal pressure within the middle ear must be maintained at all times, and all inflammatory process excluded, if we would preserve the normal middle ear function. The eustachian tube should be sufficiently patent to admit of a free circulation of air within the middle ear at all times. The volume of air within the middle ear is in direct proportion to the degree of stricture in the tube. The blocking is usually partial and only rarely is it complete. It may be constant or intermittent, depending on the etiological factor in the nose or naso-pharynx.

When the tube becomes permanently affected, as it does following repeated attacks of inflammation, we have the tube to deal with as a direct cause. In conservation we are not concerned with the end results in the tube and middle ear, except as an index for the need for conservation. By conservation we mean the removal of all pathological factors in the nose and naso-pharynx, and proper instruction to our patients before the resultant in the tube and middle ear becomes of necessity the direct object of treatment. If it were always possible to do this we would not have the resultant to deal with. We must admit that such an ideal is not always attainable, but my plea is for a more consistent effort to this end.

If we have only a mechanical blocking of the tube and no infection to deal with, we have in the middle ear either an acute or chronic congestion, with or without exudation. In the milder attacks the patient may not be aware of any departure from the normal, or he may have a "stuffed up" feeling in the ear affected. With the more severe attacks of blocking he may have pain of a varying character, with some deafness. The picture we find on examination is the blocking of the tube and the changes in the membrana tympani. The latter may vary from a minute dilatation of a single capillary, with the other part of the drum presenting its usual gray and transparent appearance, to a marked dilatation of the capillaries with discoloration of the entire drum. The drum may be edematous, the edema being part of the edema of the mucous membrane of the middle ear. With the subsidence of any of the foregoing types the patient may be entirely free from any symptoms and the resulting changes in the middle ear may not be evident even on careful examination. This may be true of a single attack, but it is not true of repeated attacks even though they be of the mildest character.

A single attack of severe character leaves its mark. These attacks in time are sure to bring about pathologic changes in the middle ear and membrana tympani, which on examination shows as the thickened, retracted and less mobile drum, with tinnitus and depreciation in the hearing. The results of a purulent inflammation of the middle ear are too obvious to need elaboration. The treatment can be readily deduced from the foregoing brief discussion of the etiology and pathology.

Beginning at birth we have the possibility of pathologic conditions in the naso-pharynx and nose which may cause any or all of the middle ear conditions. While it is true we may have ear inflammations even though we have no departure from the normal structurally in either the nose or naso-pharynx, we must have, however, an inflammation with its point of initiation in this region; the initial lesion must be here. Given such an initial inflammation and perfectly normal structural conditions in the nose and naso-pharynx, we have much less reason to expect it to travel into the tube and middle ear, and if it does we have the advantage of a normally patent eustachian tube. With a departure from the normal in the naso-pharynx and nose we have an increased liability to middle ear involvement in the presence of an initial lesion in this region.

The adenoid gland is present at birth, and from that time on it may be a pathologic factor requiring our attention. This alone may be the initial focus of infection as well as creating congestion and blocking of the eustachian tube. This should never be lost sight of regardless of the age of the patient. Obstruction to breathing and secondary nasal inflammation should not be the only cause for adenoid removal. This may be only repeated attacks of middle ear congestion, but this alone makes the removal of the adenoid imperative. Infection in the middle ear and adenoid should not be found in the same patient for many days after coming under observation. The adenoid should be eliminated as the first step in the treatment. In these ear conditions it is a crime to overlook the adenoid factor, and a capital offence to neglect it when recognized.

It should not be necessary to state this so emphatically, but it is neglected so frequently that I feel that it is necessary to give it more than passing mention.

The acute infections of infancy and childhood so frequently involve the adenoid and the mucosa of the nose and naso-pharynx, with the secondary involvement of the tube and middle ear, that we should daily inspect the membrana tympani in every such attack. The ordinary cold in the head should always be considered as a possible cause of eustachian tube and middle ear inflammation. Pain in the ear in infancy and childhood cannot be depended on to sound a note of warning. Pain may be absent. Repeated attacks even of mild type, in early life may lay the foundation for those middle ear changes which result in impaired hearing.

The nasal conditions which predispose to pathologic changes in the tube and middle ear may be very slight. If slight and intermittent in character and the accompanying result in proportion, they may be readily overlooked. Here again it is important not to overlook these apparently insignificant attacks, as they will if continued eventually cause marked middle ear changes. The middle ear cases due to intermittent blocking of the eustachian tube caused by nasal congestion should be recognized early if we would conserve the ears. The more severe attacks attract attention and are more likely to receive adequate relief. Infection in the middle ear should be diagnosed early and the membrana tympani incised promptly. A spontaneous rupture of the drum means that much damage has been done that could have been avoided by an early incision. The value of an early incision cannot be over-rated. It relieves pressure early, shortens the course of the infection and conserves the ear. A few hours means much to these ears.

Nasal congestion, nasal malformation causing obstruction, nasal and sinus infection must be recognized as active etiological factors if we would conserve the ears. Hypertrophy of the posterior ends of the inferior turbinates alone can cause pathologic changes in the eustachian tube, with the secondary middle ear involvement. Blowing the nose improperly in the presence of a nose and naso-pharynx free of secretion can do much harm in the middle ear. If we have secretion with its ever present infection, this may be blown into the tube and middle ear. Improper methods of cleaning the nose will do the same thing. Forcible drawing back of secretion is productive of much harm. We may do much to prevent evil by properly instructing our patients in these essentials. We have to treat results it is true, but if we recognize the causes and remove them early we shall have fewer results to treat. We should not have to say "better late than never," but "get it early."

Inflation and other methods of treatment of the tube and middle ear are assets if we first remove the cause, otherwise they are of little avail. It is amazing how often no attention is paid to the underlying cause in the nose and naso-pharynx. I believe the reason for this is the method of caring for the ear, nose and throat cases in our clinics and hospitals. There is one department for the ear and another for the nose and throat, and usually there is no connection between the two departments in the treatment of the ear, nose and throat cases. The two departments are presided over by a different group of men, and the patient does not get the benefit of having the same man or the same group of men examine, diagnose and treat his ears, nose and throat. In no other way can the individual get adequate treatment.

Our clinics and our hospitals are our schools, and here it is that we must train the men whom we expect to develop into efficient ear, nose and throat practitioners. If we can establish in our institutions of clinical experience and practices a single department for the ear, nose and throat, we may expect to develop men who will have a true appreciation of correlation in ear, nose and throat practice.

Cases such as the following are constantly coming under observation. Their frequency offers the only excuse for this paper. In all of these cases the internal ear was normal. Many details have been omitted.

Case I.—G. F., age 3½ years old. First seen November 27, 1914. Has been receiving treatment at one of the ear clinics once a week for the past year, during which time the left ear has been discharging. Treatment has consisted in douching the ear. On November 19, 1914, complained of pain in the right ear and was seen by the family physician who advised taking the child to the same clinic. This was done, but no special attention was paid to the right ear. The family physician again saw the child on the 23d, and found a swelling back of the right ear and the child had a temperature of 101 degrees. The child was again taken to the same clinic without receiving proper treatment. On November 27, the family physician again saw the child and found that the swelling had increased, temperature 101 degrees, and the child looked ill. When I saw her a few hours later I found a fully developed acute mastoiditis on the right side with marked swelling behind the ear such as we so frequently see in infancy and early childhood. The same day I operated on the mastoid and removed an adenoid mass that completely filled the post-nasal space. Culture from the mastoid showed a pure streptococcus.

This case represents either negligence or ignorance in treatment to such a degree that one wonders how it could occur. It is incomprehensible that a middle ear infection could have been under observation for one year without having had the adenoid investigated. The prompt removal of the adenoid when the child was first seen would have done more than any amount of treatment confined to the ear. The failure to recognize a sick child, as was done in this case, was inexcusable.

Case II.—A. B., age 27. First seen on October 4, 1913. History of deafness and tinnitus in right ear for many years, and the same in the left ear for past eight months. Colds in head frequently all his life. Had tonsils operated on eight years ago. With the colds the deafness is much worse.

*Examination.*—Nose: septum deviated to the right, which with the hypertrophy of all the turbinates, causes marked nasal obstruction. Intense congestion of the mucous membrane of the nose, naso-pharynx and pharynx. Tonsils negative. Considerable adenoid tissue, with bands extending to the eustachian tube cartilage on both sides. Right ear: canal normal, membrana tympani, chronic congestion, thickening marked, and retraction. Air conduction less than bone conduction, both for intensity and duration. Left ear: same, except that the membrana tympani shows a little less thickening. Advised relief of the nasal obstruction by sub-mucous resection of the septum, reduction of the turbinates and removal of the adenoid, followed by the appropriate treatment of the eustachian tube and middle ears. Patient at this stage told me that he had been having his ears treated for a considerable period by a specialist who confined his treatment to the inflation of the middle ears. No attention had been paid to the nose and throat condition. The patient said that he felt that this needed attention and for this reason sought relief elsewhere. My advice was accepted in this case and on October 11th the nose was operated upon in the usual manner in the office, under local anesthesia. The ears were treated seven times following this, and the patient was not seen again until July, 1914, at which time the ears were very much improved, the hearing showing about 25 per cent improvement, the tinnitus had gone, and the drums showed no congestion. I advised the adenoid removal and further treatment of the ears, as I was sure that this would give still further relief. The patient was so well that he decided to postpone further treatment, and I have not seen him since.

Case III.—C. H., age 4. First seen October 23, 1912. History of "colds in head," but no deafness or earache noticed by parents. Breathes through nose. Examination shows a good deal of adenoid, both ear drums thickened and retracted, and the light reflex almost gone. Tests showed considerable deafness. Removal of adenoid on October 26, 1912. Following this the ears were gently inflated at intervals for several months. On September 14, 1914, the mother of the child came to the office for treatment, and the opportunity was taken to examine the childs ears. Both ear drums showed that the retraction was entirely gone and the light reflex normal in size, although the drums were not of absolutely normal transparency. The hearing was normal. This illustrates a class of cases that are apt to escape attention.

Case IV.—C. K., age 3½. First seen June 9, 1914. History of discharge from the left ear for two days following a cold in the head. Examination showed an acute purulent infection of the right middle ear. The left drum was acutely congested. The nose showed the usual appearance of an acute rhinitis, the fauces showed acute inflammation of the tonsils and pharynx, and a moderate amount of adenoid. The ears received appropriate treatment, and the parents were told that the adenoid would interfere with the prompt relief of the ears. The child was kept under consant observation with efficient ear douching, until July 13th, at which time the left ear was discharging profusely. The right ear drum was congested much of the time from June 9th to July 13th. The removal of the adenoid was frequently urged, but advice was not accepted. Saw the child again on September 10th, at which time the left ear was discharging and the right ear drum was very red. The adenoid removal was again urged. The ear condition not improving, I was allowed to operate on October 20th. The tonsils were found to be badly infected and cervical adenitis quite marked, which made the tonsil enucleation imperative. On October 23d the left ear was dry and the right ear drum had regained its gray transparency. The improvement continued up to the date of writing. This case illustrates a large class of cases. I report this particular one as it is fresh in my mind, and I had great difficulty in securing the consent to operate.

Case V.—J. R., age 16. First seen November 7, 1914. History of deafness for past four years. Mouth breather, but no attacks of earache. Colds in the head all of the time. Examination showed; nose—septum deviated to the right sufficiently to occlude the right side of the nose. Left side of the nose showed the left inferior turbinate blocking this side of the nose. Tonsils not large or infected. Adenoid marked. Right ear: membrana tympani showed marked thickening and retraction, with complete loss of light reflex. Hearing test showed marked middle ear deafness, watch heard two inches from the ear. The speaking voice not heard with either ear at distance of two feet. Left ear: the same as the right except the watch could not be heard on lobe of ear. Mother had had this boy to two different physicians who examined him and told her that there was nothing to be done for the nose and throat. I did not ask the names of the physicians, but assume that they were not ear, nose and throat men. This was a case in which any intelligent physician should have seen the indication for treatment. Adenoid removal and resection of septum were completed by December 14, 1914. December 26, 1914, examination showed light reflex normal both sides. Voice heard three feet. February 27th, examination shows continued improvement and conversation carried on without effort. Inflation has been the only after treatment.

Case VI.—F. R., 7 years old. First seen December 27, 1913. History of colds in head, sore throat and earache, at frequent intervals for several years. Examination: Tonsils large, adenoid large, and both ear drums show much thickening. Tonsils and adenoid removed, and to date there have been no more attacks of earache.

Case VII.—M. C., age 4. First seen May 10, 1910. History of discharge from both ears for the past three years. Had tonsils and adenoid operated on at one of the hospitals eighteen months ago. Douching of the ears has been constant, but no improvement. Examination showed chronic purulent infection of both ears, some tonsil tissue and considerable adenoid. On May 21st tonsils and adenoid were removed. On June 9th the right ear was dry, and remained so. On July 22d the left ear was dry and remained so. The first operation was not complete. Two other children in this family were seen and treated at the same time. The same conditions were present, and the same result followed operation. Both had been under treatment at a clinic.

Case VIII.—H. B., age 2. First seen February 1, 1910. History of discharge from both ears for over a year. Examination showed both ears discharging pus. Adenoid removed the same day, and both ears dry February 16th, and have remained well.

Case IX.—A. C., age 8. First seen April 17, 1909. History of discharge from both ears for several years, and had been treated by several physicians. Examination showed a discharge from both ears and a large adenoid, sufficient to cause mouth breathing. May 25th, adenoid removed, and on June 30, 1909, both ears were dry. Received no further treatment and reported on September 1, 1909, for observation at which time both ears were dry and openings in drums were closed.

Case X.—Baby C., age 13 months. First seen February 11, 1914. History of acute illness beginning three days ago. Examination showed an acute purulent infection of the right frontal sinus. Both ear drums free of congestion, but some loss of transparency. February 27, both drums red and bulging. Incision showed pus. Discharge both ears continued and baby was very sick. March 2d, adenoid removed. March 11, were dry, incision closed and temperature normal. Baby remained well.

Case XI.—C. E., age 3 years. First seen April 21, 1914. History of cold in the head with discharge from both ears on two occasions within the past month. Has not had any of the diseases of childhood. Examination showed some nasal obstruction, tonsils large, and considerable adenoid. Both ear drums were slightly congested. May 5, 1914, tonsils and adenoid operated on, and May 8th both drums were normal, and have remained so.

Case XII.—R. F., age 6. First seen March 4, 1913. History of having frequent attacks of earache involving both ears since he was two years old. With these attacks the child had a temperature and pain so severe that it caused slight delirium. At the age of two and a half had tonsils and adenoid operated on which gave some relief, but ear attacks continued. Examination showed tonsils to be ragged and infected and involvement of cervical glands. There was considerable adenoid. Both ear drums were congested, complete loss of reflex and much thickening. Hearing was markedly impaired. Advised operation for removal of adenoid and tonsils, which was refused. From that time to November 15, 1913, the child was seen with frequent attacks of earache, and each time the drums were intensely red. November 18th tonsils and adenoid were removed. Last seen January 3, 1914, at which time both ear drums were free from congestion. transparency was returning, that is a light reflex was present and the hearing greatly improved. There has been no attack since the operation.

Case XIII.—S. F., age 16. First seen June 12, 1912. Had diphtheria at the age of five, both ears discharging ever since, and deafness very marked. Has been treated most of the time during this period. For the past four years has been treated twice a week at one of the hospitals in Manhattan. During this time no attention was paid to the nose and throat, until at the end of three years, when the adenoid was operated without anesthetic in the clinic.

Only slight improvement followed this. Examination showed both ears discharging and large perforation in each drum. Nose showed obstruction and chronic sinus infection, with large amount of pus discharging anteriorly and posteriorly. A large amount of adenoid was present. June 12, 1912, the adenoid was removed, and a few days later the nose was operated on. September 12, 1912, showed both ears to be dry and the nose free of pus. The hearing showed about 25 per cent improvement.

Case XIV.—D. H., age 10½ years. First seen March 8, 1913. History of having had since she was six years old recurring attacks of earache and discharge involving both ears. Deafness has been marked. Many of the attacks have been severe and have lasted for months. Has been treated by a specialist, but no attention paid to the throat. Examination: Discharge from both ears. High perforation both ear drums, with marked swelling. This attack was severe and the child was very ill. Both tonsils were large and infected and there was a large adenoid with nasal discharge. Appropriate treatment of the ears, nose and throat was instituted, and on March 25 the tonsils and adenoid were removed. On April 20 both ears were dry, perforations were closed, and drums free from congestion. Gentle inflation following this resulted in restoring the hearing to nearly normal. The last observation was July 27, 1913, at which time the drums had regained nearly normal transparency, and the hearing was still improving.

Case XV.—C. H., age 31. First seen September 29, 1911. History of deafness for the past two years with marked tinnitus. Has frequent colds in the head at which time there is pain in both ears and the deafness and tinnitus is worse. Has had discharge from the ears with the colds. Has been treated for one year with no results. Examination: Both ear drums are retracted and there is considerable scar tissue present. Hearing tests show air conduction to be less than bone conduction for both duration and intensity on both sides. The watch cannot be heard on the lobe of the right ear, but can be heard on the lobe of the left ear. The speaking voice could not be heard by either ear, except at a distance of six inches. The nose showed a marked obstruction, due to a deviated septum, with a large amount of discharge on both sides. On October 7th the nose was operated on for relief of obstruction and sinus infection. Subsequent to this the ears received appropriate treatment. By November 1st the hearing was better, and the nose practically well. December card record shows hearing improving. January 1, 1912, tinnitus much less and has entirely disappeared at night; hearing still improving. March 1, 1912, tinnitus only occasionally. Can hear conversation voice any part of large room, and with back turned to speaker. July 1, 1912, the tinnitus was hardly noticeable, and the hearing was still improving.

Case XVI.—K. T., age 14. First seen March 18, 1911. When four years old had tonsils and adenoid operated. Has "chronic cold" in head and at times, earache. Ears feel stuffed up most of the time, and has noticed difficulty in hearing in school. Examination showed both ear drums retracted, and reflex diminished. Hearing tests show some loss of sound conduction through the middle ear. Tonsils and adenoid negative. The nose showed marked obstruction due to enlargement of all the turbinates, with a large amount of mucopus. April 14, 1911, nasal obstruction removed, and appropriate treatment up to June 17, 1911. Last report June, 1914, stated that the hearing was normal and had not had earache or a stuffed up feeling at any time.

Case XVII.—T. V. N., age 6½. First seen February 24, 1913. History of discharge from both ears following colds most of the time for the past three years. Deafness marked. Examinatin shows ears discharging with some congestion of the drums. Tonsils and adenoid marked. March 2, 1913, operated for the removal of tonsils and adenoid. April 16, 1913. Ears well and hearing much improved. Last report November, 1914. Since April, 1913, there has been no ear trouble and the hearing is normal.

Case XVIII.—V. W., age 3. First seen May 27, 1914. Had a discharge from the left ear one year ago, and present discharge began four days ago. Examination showed an acute infection of the left ear, and the right ear was acutely congested. There was considerable adenoid present. The discharge from the left ear continued to be profuse, although douching was carried out dilligently. The right ear drum continued to be congested. This condition persisting, the adenoid was removed on June 15th and on June 20th the discharge had stopped and the ears have remained well.

Case XIX.—G. McK., age 16. First seen June 12, 1912. History of colds and sore throat with deafness past eight years. Examination showed almost complete nasal obstruction, tonsils and adenoid marked. Both ear drums very much thickened and retracted. Hearing test showed about 50 per cent depreciation in middle ear sound conduction. June 13, 1912, tonsil and adenoid operated, and June 21, 1912, resection of septum and both inferior turbinates. August 19, 1912, the hearing had improved about 25 per cent. Last report March 17, 1913, the hearing was about normal.

Case XX.—J. McQ. Age 18. First seen September 25, 1911. History of the nose being stopped up for the past year, and accompanied by "stopped up" feeling in the ears, and occasional pain in the right ear. Has not been hearing well for at least one year. Examination shows both ear drums somewhat retracted, with some lessening of transparency. Hearing diminished about 10 per cent. The nose shows almost complete obstruction, due primarily to a deformity of the septum, and secondarily to hypertrophy of all the turbinates. October 21, 1911, resection of the septum and both inferior turbinates, which was not followed by any treatment of the ears. December 12, 1911, was told to report in three months. April 9, 1912, nasal condition perfect, the retraction of drums was no longer present, and the hearing was normal.

Case XXI.—J. M., age 2½. First seen October 7, 1909. History of constant discharge from the right ear since six months old. Four months ago the glands on the right side of the neck broke down and have been discharging ever since. The child has been quite deaf. He has been under constant medical care since the trouble began, but aside from syringing the ear, nothing had been suggested. Examination shows right ear to be discharging freely, and the left ear drum to be much retracted and thickened. There is considerable deafness. The tonsils are large and infected, and the adenoid is large. The nose shows some secondary swelling of the turbinates. There are palpable cervical glands, both anteriorly and posteriorly on both sides, and a discharging sinus in the center of an ugly scar. October 14, 1909, the tonsils and adenoid were removed and the scar tissue, sinus and broken down glands were operated. December 28, 1909, right ear was dry and has remained so and the drum closed. The hearing was almost normal. The left ear drum was not retracted. Primary union was secured following the operation on the neck.

Case XXII.—G. O. S., age 38. First seen August 7, 1911. For the past two years has been deaf in the right ear, and both ears feel stopped up much of the time. Has frequent colds and the ears are worse with the colds. Examination shows marked nasal obstruction and its attending symptoms. Right ear shows the drum to be retracted, thickened and chronically congested. The right eustachian tube is blocked. The left ear is not so much involved. Hearing is diminished. September 22, 1911, resection of the septum and both inferior turbinates. The ears did not clear up for some time, but by December 19, 1912, the ear condition was so satisfactory that the patient did not feel that he needed further attention. The patient was seen frequently socially after treatment was discontinued and the benefit was permanent.

Case XXIII.—A. H., age 25. First seen May 11, 1909. History of constant deafness and tinnitus of both ears for the past three years. Has frequent colds. Both membrana tympani showed retraction and scar tissue. The usual tests showed a great deal of depreciation in hearing on both sides. The adenoid was quite large with bands extending to the eustachian tube openings. Nasal obstruction was marked. The nasal obstruction was relieved and the adenoid removed. The ears were treated at intervals up to February, 1910. At this time there had been considerable improvement in the ear condition, the tinnitus being less, and the hearing being much better. I did not see this patient again, but on October 28, 1911, she sent me a report stating that her hearing was very good, the tinnitus had gone and she was free from colds. She considered that she had received complete relief.

# INTERESTING FINDINGS IN THE EXAMINATIONS OF THE EARS OF INSTITUTIONAL CHILDREN.*

**Samuel K. Frost, M.D.,**
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DURING the past eight years I have been making physical examinations of children for the Department of Health, for the purpose of discovering physical defects that might be corrected. For the last two years my work has been confined to the children in institutions. Among the institutions in which I examine children is one for the deaf, and being interested in diseases of the ear, I was curious to know the physical and functional conditions of the ears of these children. Permission of the superintendent and sanction of the Health Department being obtained, I proceeded to make an examination of the ears. The number of cases that could be improved astonished me.

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*Read before the Brooklyn Pediatric Society, December 16, 1914.

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| Number of cases examined | 89 |
| Impacted cerumen | 25 |
| Chronic purulent | 6 |
| Eczema of canal | 2 |
| Foreign bodies (bead and wad of cotton) | 2 |
| Total defects | 35; or 40 per cent |

Next a Manhattan institution for the deaf was examined:

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|---|---|
| Total cases examined | 249 |
| Impacted cerumen | 53 |
| Chronic purulent | 11 |
| Eczema of canal | 7 |
| Total defects | 71; or 28 per cent |

When I went to this institution the superintendent informed me that they had an attending otologist, who examined the ears of all the children every month.

I had a suspicion that if the ears of hearing children were examined a number of cases in need of treatment might be found, so I was directed to examine some institutions of hearing children. In the first one:

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|---|---|
| Number of cases examined | 275 |
| Impacted cerumen | 63 |
| Chronic purulent | 5 |
| Eczema of canal | 5 |
| Total defects | 73; or 27 per cent |

In another institution:

| | |
|---|---|
| The number of cases | 256 |
| Impacted cerumen | 95 |
| Chronic purulent | 11 |
| Eczema of canal | 4 |
| Foreign bodies | 1 |
| Total defects | 111; or 43 per cent |

The number of defects found is larger among hearing children than among the deaf. It is quite probable that an equal number of ear defects might be found among average school children.

The question might be asked, what is the significance of these defects, and why should they be corrected? I may mention some of the reasons that occur to me, beginning with impacted cerumen, the most frequent defect.

*First.*—It may give rise to neuralgia of ear, also of the supraorbital and temporal regions. It is irritating to the canal, causing scratching, thence infection, then furunculosis.

*Second.*—Causes cough, usually referred to the larynx.

*Third.*—Function of hearing always impaired. Therefore the child's mentality suffers; dull, stupid, inattentive. May also suffer from various reflex disturbances.

*Fourth.*—Epileptiform seizures are reported from this cause.

*Fifth.*—Dizziness and headache due to increasing labyrinthine pressure.

*Sixth.*—In an ear with previous recurrent purulent inflammation, the obstruction to the flow of pus may result in the most serious consequences, even death, by involving the inter-cranial structures.

*Seventh.*—If cerumen be allowed to remain in the canal, the impairment of hearing which it causes will be progressive, and may cause perforation or destruction of the drum, and also an ostitis of the bony canal and obliteration of the mastoid cells, thus seriously affecting the function of hearing.

### Chronic Purulent Discharge From the Ears.

This causes increasing impairment of the function of hearing, due to bone necrosis and destruction of the receptive and conducting structures.

It is dangerous to life, causing mastoiditis, meningitis, and is the most frequent cause of brain abscess.

An acute exacerabtion of a chronic ear, resulting in mastoid involvement, is the most dangerous and most rapidly progressive of all forms of mastoiditis.

### Eczema.

Eczema of the canal of the ear is very annoying to the child, causing constant itching; the canal of the ear gets filled with scales; scratching the ear infects the canal, causing furunculosis, a very painful condition.

Foreign bodies, of course, should be removed, being dangerous to both life and function.

### Functional Test of Hearing.

It is very important in deaf children to determine whether they are absolutely deaf or still have a degree of hearing sufficient to be trained by the use of the aurophone. By means of this they may retain what voice they have and may be taught to converse in a nearly normal tone. If they are neglected they soon lose all power of speech and make only unintelligible and horrible sounds.

It is my opinion, judging from the children that I have examined, that many cases that could be improved are not being treated to preserve their voices and improve their hearing because of careless or insufficient, and sometimes no functional tests in the institution where they are living.

## UTILIZING THE WASSERMANN TEST.

**Horace Greeley, M.D.,**
Brooklyn-New York.

A CERTAIN number of physicians, having acquired that skepticism of all innovations which experience and the multiplicity of broken reeds to be seen in retrospect along the track of advancing medical science is thought to justify, feel quietly doubtful of the infallibility claimed for a positive Wassermann test in the diagnosis of syphilis. Another group, implicity accepting all that comes from the laboratory without according due importance to the reservations which must always accompany a report of a negative result in such a test, dismiss a suspected case after a single negative finding. Further, when a positive diagnosis has been followed by a course of appropriate treatment, it is quite common for the patient to be dismissed as cured, after one, or at most two, negative Wassermann tests, taken, in most cases to be sure, several weeks or months after cessation of treatment.

The more we learn of syphilis the more insidious do we find its varied manifestations, and the more experience that is accumulated in regard to the results of treatment the more cautious do we become in pronouncing upon the ready curability of a particular case or cases. Formerly, so soon as the symptoms of the disease were banished by mercurial treatment, and the patient remained apparently well for a few months, or at most a year or so, he was discharged with a clean bill of health, but in only about 25 per cent of which cases, as modern knowledge indicates, was he actually freed from the infection. It seems that something akin to this would happen under the present salvarsan treatment regime, which most authorities regard as vastly more efficient than that with mercury, were it not for the precautions with which laboratory tests, especially the Wassermann, enable us to surround our measures.

Since "be sure you are right and then go ahead" is of such vast importance in dealing with cases of suspected or actual syphilis, it is interesting and important to consider the opinions of the best authorities upon these tests as they are now in use, especially as to the way in which they should be employed in determining a doubtful diagnosis, regulating treatment, or in assuring that an apparent cure of a given case is real and final.

In the first place, what is a positive Wasserman and what does it mean?

If a regulated amount of blood serum from a case of well developed syphilis be mixed with a tissue extract (such as can be made by soaking human or guinea-pig heart, kidney, or liver tissue in alcohol —syphilitic tissue was formerly thought necessary) an invisible reaction takes place between substances in the extract and enzymes peculiarly abundant in the blood serum of syphilitics which destroys a property common to all fresh blood serum, as a subsequent test will prove. This property, or substance as it has been regarded, is known as complement. In practice, as it has been found that quantitative as well as qualitative factors have to be considered, it is usual to heat all serum before examination in order to kill the property mentioned, and then to reinforce the heated human serum with the fresh, previously tested and adjusted as to strength, blood serum of some convenient animal, such as the guinea-pig or rabbit. After this the tissue extract is added, and any of the specific enzymes alluded to which may be present combine with it, using up in the process the fresh property of the animal serum (the complement) in proportion to their strength. As stated this reaction is invisible, and in order to determine whether it has taken place another reaction is attempted, in which one of the elements employed is visible. For this purpose a rabbit may be injected four to five times with doses of sheep's blood, when his blood-serum develops the property of dissolving sheep's red blood cells. Adding a regulated amount of such anti-sheep rabbit serum (heated as was done with the human serum so that for a reaction fresh serum will be necessary) together with an appropriate quantity of sheep's red blood cells to the mixture of patient's serum, tissue extract and fresh animal serum, we supply the potentialities of such a visible reaction, which develops, provided the invisible reaction has not taken place, since then the fresh animal serum would not be used up and enables the special enzymes of the rabbit's blood to attack and dissolve the sheep blood cells, giving rise to a clear red solution. This negative reaction is easily distinguished from a positive one which presents a colorless fluid, at the bottom of which the undissolved red cells appear since the patient's serum has been so specifically active as to use up some or all of the fresh element of the animal's serum employed, the complement.

As is well known, everyone at first thought that the test was a specific complement-fixation reaction in which the infectious agent was directly involved, but later experience proved that the phenomenon was really dependent upon the presence in the blood of a substance, probably an enzyme, which possessed specific affinity for the tissue waste which results from the activities of the parasite, and which is not present in but very few other conditions, at least in appreciable amount.

In a case of syphilis, before a Wassermann test can be expected to result positively, sufficient time must have elapsed since the entrance of the specific organism for it to have reached the general system and to have developed a general reaction. This is proved by the gradual increase in the number of positive test results as the first stage of the disease advances, well illustrated in the following table (Craig, *Am. J. Med. Sc.*, Jan., '15).

DATE OF APPEARANCE OF POSITIVE WASSERMANN IN PRIMARY SYPHILIS.

| Period | Cases | Positive | Negative | Per Cent Positive |
|---|---|---|---|---|
| 1st Week............ | 76 | 26 | 50 | 34 |
| 2d " ............ | 149 | 86 | 63 | 57 |
| 3d " ............ | 151 | 102 | 49 | 67 |
| 4th " ............ | 159 | 121 | 38 | 76 |
| 5th " ............ | 40 | 32 | 8 | 80 |

That the amount of the specifically reacting substances varies in the blood of different syphilitics has been evident from the varying strengths of the Wassermann reactions given thereby, but, although marked variations in this particular had been observed by various authorities in the blood serum of particular cases over a few weeks interval, it remained for Craig to demonstrate under the most reliable conditions (among the military prisoners in Ft. Leavenworth) that the blood serum of a given syphilitic, without treatment, alcoholics, or subjection to any specifically influencing condition, might today give a negative result and tomorrow a positive. From his results I have compiled the following table:

RESULTS OF WASSERMANN TEST ON BLOOD OF TEN KNOWN SYPHILITICS, UNTREATED AND IN CONFINEMENT, OVER PERIOD OF ONE WEEK; ONE TEST MADE PER DAY ON EACH INDIVIDUAL.

| | | | | Doubtful. | |
|---|---|---|---|---|---|
| Stage | No. Cases | Positive Results. Hæmolysis Totally Inhibited | Negative Results. Hæmolysis Complete | Hæmolysis Over 50% | Hæmolysis Under 50% |
| Primary ....... | 2 | 9 | 0 | 0 | 5 |
| Secondary ..... | 4 | 21 | 1 | 1 | 5 |
| "Latent" ....... | 4 | 13 | 1 | 3 | 11 |
| | — | — | — | — | — |
| Totals ....... | 10 | 43 | 2 | 4 | 21 |

Additional evidence has, of course, been furnished by many cases recorded in the literature which, on one or several occasions, gave a negative Wassermann, followed, or even alternated by a positive. Thus we have conclusive evidence of the absolute necessity of repeated Wassermann tests in cases of suspected syphilis where the first, or even more, result negatively.

It can be stated as regards a positive result with this test that the only conditions, other than syphilis, in which there is the least probability of such occurring are: the state immediately following narcosis, as with ether or chloroform; in cases of yaws (a tropical disease whose organism is nearly allied to the spirocheta pallida); in leprosy; relapsing fever; during the febrile stage of a malarial attack; and, possibly, occasionally in scarlet fever.

Among some 11,000 Wassermanns recorded in recent literature, made among other than syphilitics, including normal individuals, and diseases such as have been mentioned as often giving a positive result, less than one-half of one per cent gave a positive return.

It is thus evident that under all circumstances the possibility of being lead into error by a positive Wassermann is easily guarded against, since the easy exclusion of the other occasionally positively reacting diseases can rarely present much difficulty, and when this has been done within the least margin of possible error the chances of a positively reacting blood serum being from other than a case of actual syphilis is indeed infinitesimal.

There are a number of systems of applying the Wassermann all of which are reliable to the extent of the familiarity of the operator with the one used and the care taken. All systems are so regulated that their scale from negative to strongest positive covers the same possibilities as regards reacting strength of the patient's sera; but in reporting the result of the test some serologists recognize three, and others five points (see table, Scales A and B) on the said scale, as exemplified in the following table giving interpretations of the various possible results:

WASSERMANN TEST INTERPRETATION TABLE.

| Amount of Hæmolysis | Scale A | Scale B | Diagnosis |
|---|---|---|---|
| 87½ — 100%......... | — | — | "Not proven" (single test). |
| Not more than 87½%.. | +— | +— | Doubtful, normal persons may give. |
| Not more than 75 %.... | +— | + | Same. |
| Not more than 50%.... | + | ++ | Positive only if observed first few weeks of supposed infection, or if subsequent to known syphilis (history or present clinical symptoms). |
| Not more than 25%.... | + | +++ | Same. |
| Under 12½% ......... | ++ | ++++ | Always positive, even in absence of history or signs, when other conditions known to give positive reactions are excluded. |

Certain controlable factors, acting upon the patient, or specimen taken for examination may so affect the blood serum as to produce a negative result when a positive would otherwise be obtained, or vice versa. One of these is the recent ingestion of alcohol which acts to prevent a positive directly as the amount imbibed increases, and indirectly as the positive blood serum element exists in increased strength, since it is natural that a greater amount would be required to overcome a strongly positive serum than a weakly positive one. As a rule in the neighborhood of the equivalent of three ounces of alcohol may cause an otherwise positively reacting serum to give a negative result over a period of about twenty-four hours, on the average.

As a contrast to this it has been demonstrated that bacterial growth in the blood specimen before it has been tested may so effect a normal serum as to cause it to give a positive reaction, and, although the extreme contamination of the specimen undoubtedly necessary in order to effect such a change may only rarely obtain, it behooves one to exercise great care to avoid the possibility.

It has been observed (first by Gennerich in 1910) that a first injection of salvarsan often causes the blood serum of a syphilitic to give a much stronger positive Wassermann reaction than before its administration, and that even a negative reaction has under its influence given way to a positive. So in such cases as one is justified in suspecting to be syphilitic in spite of other tests, or where the question of final cure is involved, it would be a wise precaution to make use of this, a provocative Wassermann test, as it has been called. For the purpose a small dose (0.3 grammes) of salvarsan is given and the blood tested every second day, for at least three times, although some (as Craig, *A. J. Med. S.*, Jan., '15) recommend daily examinations for the following week. This last authority gives the following table as illustrative of results obtained with this test:

Provocative Wassermann Test.

| Case | Time Since Treated | Result, Ordinary Wassermann | Result, Provocative Wassermann |
|---|---|---|---|
| 1....... | 15 mos. | — (Negative) | Positive, total inhibition hæmolysis. |
| 2....... | 16 mos. | — (Negative) | Negative. |
| 3....... | 17 mos. | — (Negative) | Positive, total inhibition hæmolysis. |
| 4....... | 18 mos. | — (Negative) | As above. |
| 5....... | 19 mos. | — (Negative) | As above. |
| 6....... | 21 mos. | — (Negative) | Negative. |
| 7....... | 24 mos. | — (Negative) | Negative. |
| 8....... | 24 mos. | — (Negative) | Negative. |

When symptoms present which indicate involvement of the nervous system, as it is claimed that fully 10 per cent of cases of cerebrospinal syphilis give a negatively reacting blood serum (in paresis practically 100 per cent positive) and as cases of locomotor ataxia show negative in the blood to the extent of 30 per cent, it is often necessary to make this test upon the spinal fluid, as is also the case whenever one wishes to be sure of total eradication of the infection before discharge of any syphilitic from treatment as a recovered case.

If a positive Wassermann has been obtained as preliminary to treatment, it has been found that after the first week following the initial dose of salvarsan this reaction diminishes in intensity and with each successive dose continues to decline to total disappearance, and, finally, that if complete eradication of the infection be not accomplished by the treatment the reaction will gradually return in inverse order, and will be manifest months, and even years, before any clinical evidence of relapse will present. Thus it is possible to make use of the Wassermann test as a guide indicating when to stop treatment, and, after this has been discontinued, to use the test as a watch upon the patient; and as such it proves a most efficient danger signal, calling the physician back to the firing line at the first revival of activity upon the part of any invading parasites that may be left, before they have had a chance to work further destruction or to spread to new areas.

The following table, showing the practices in the modern diagnosis of syphilis, summarizes the occasions upon which the Wassermann is most important:

LABORATORY DIAGNOSIS OF SYPHILIS.

| Stage of Disease | Principal Test | Auxiliary Test |
|---|---|---|
| First .............. | Oozing from lesion examined, aid of dark field condenser | Wassermann, better Provocative Wasserman. |
| Second ............ | Wassermann (blood) repeated if negative | Provocative Wassermann.<br>Wassermann of spinal fluid. Luetin test. |
| Third ................. | As for second | As for second. |
| Congenital and so called Latent ..... | As for second | As for second. |

After a patient be once proven to have syphilis, according to the opinion of the most reliable authorities, and according to what is even better, good common sense, he should never be pronounced free from infection until for a period of at least two years after cessation of treatment he has failed to react positively to any of the above mentioned tests, and has presented no clinical signs in the interim. To conservatively fulfill the indications, a blood-serum Wassermann should be made once a month; and a spinal-fluid Wassermann and a luetin test at the end of the year. An insidious relapse is a most serious occurrence and no pains are too great to avoid its possibility.

## THE FAMILY PHYSICIAN AS A PART OF THE STATE DEPARTMENT OF HEALTH.*

**Frank Overton, M.D.,**
Patchogue, L. I.

EVERY physician of New York State is an integral part of the State Department of Health, just as every lawyer is an integral part of the judicial system. A number of mandatory duties are imposed upon every physician by the public health law; a number of other duties are implied; and a condition of intimacy and co-operation is presupposed. The object of this paper is to call the attention of physicians to their duties and privileges in relation to the State Department of Health.

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* Read at the Annual Meeting of the Suffolk County Medical Society, Riverhead, October 29, 1914.

The most evident mandatory duty of the practising physician is to make a report to the local health officer of all cases of communicable diseases that he sees. This report shall be made *within twenty-four hours* after the case is first seen. (Chap. 2, Sec. 2 of the Code.) If a case of communicable disease exists on any farm or dairy from which milk or its products are sold, the report shall be made *immediately*. (Code, Chap. 2, Sec. 8.)

The implied duty of every physician is that he shall make a correct diagnosis within a few hours. Every physician is therefore a diagnostician for the State Department of Heath. It is the custom of many physicians to wait for hours or days until the diagnosis is so evident that even a layman can make it correctly. If a physician is suspicious of a case, but is unable to make a correct diagnosis, his implied duty is to report the case to the local health officer for diagnosis. The health officer is the official diagnostician of the State Department of Health. It is the privilege, as well as the duty, of every physician to avail himself of the diagnostic services of the local health officer in every suspicious case. If the case is reported, the further responsibility for the spread of the disease rests upon the health officer, but if the case is not reported, the responsibility rests entirely upon the family physician.

The law is mandatory regarding the duty of the family physician in every case in which diphtheria is suspected. (Code, Ch. 2, Sec. 10.) The law is that the physician or the health officer shall take cultures in order to determine the diagnosis. When a physician delays to take cultures or to report the cases that are suspicious of diphtheria, he is a lawbreaker, and an inefficient physician.

The law is also mandatory that every physician shall take proper steps to isolate every case of communicable disease and to prevent the spread of the disease to others. The law further says that he shall do this *immediately* on discovering the disease. (Code, Ch. 2, Sec. 11.) It is the implied duty of every physician, first, to make a diagnosis, and second, to know what precautions are required by the State Department of Health. The modern requirements of isolation and quarantine are not burdensome on the stricken family, and there is no reason why he should not put them in force in every mild and suspicious case as well as in those cases that are well-marked and deadly.

The removal of isolation and quarantine is *not* the duty or privilege of the family physician. That duty rests wholly with the health officer. If the health officer does not attend to that himself, he is remiss in his duty. The law further requires that two negative cultures be secured on successive days before a diphtheritic patient is released.

It is also the mandatory duty of the family physician to give specific directions for the disposal of all excretions from cases of communicable diseases. (Code, Ch. 2. Sec. 16 and 17.) It is the implied duty of the physician to find out what are the modern standards and requirements of disinfection and of the disposal of excretions. A sheet moistened with a solution of chloride of lime does not meet modern requirements.

Physicians in private practice have grave and important duties in relation to tuberculosis cases. (Code, Ch. 2, Sec. 42, and public health law, chapters 320 to 330 inclusive.) The law is mandatory that every physician *shall* report every case that he knows to have tuberculosis. It further says that he *may* report any case that appears to be suffering from tuberculosis. It is the evident intent of the law that physicians shall seek out consumptive cases, instead of trying to avoid them. The law specifies that a health officer shall co-operate with every family physician by securing the examination of all specimens of sputum which the family physician may wish to have examined for tuberculosis germs. The law further provides that the family physician may relieve himself of the duties of looking after the isolation and disinfection that are required in other communicable diseases, simply by certifying his wishes to the health officer. The intent of the law is to aid the physician if he desires to treat the case, and to relieve the physician of responsibility if he wishes to drop the case. But a physician has a great legal duty to perform in reporting every suspicious case of tuberculosis to the health officer.

The State Department of Health provides laboratory facilities for water analysis, and bacteriological examinations, particularly in diphtheria and typhoid fever, and sends the outfits for taking specimens. The laboratory also sends out free supplies of antitoxin for diphtheria and tetanus. It is the implied duty of physicians to make use of these facilities and to know how to take specimens, and how to give antitoxin.

It would seem that vaccination is a subject in which the truth should be known and universally accepted by the medical profession. The causes of the dangers and accidents that may occur in vaccination are well known, and may readily be prevented. If the instructions that are sent out by the State Department of Health were followed, there would be no complications following vaccination. It is the implied duty of every physician to become familiar with these instructions regarding vaccination.

The public health law (Sec. 21, c.), authorizes the employment of public health nurses by municipalities. It is the implied duty of every physician to co-operate with the public health nurse of his locality, making and confirming diagnosis, and prescribing for cases which are brought to him by the nurses. The nurse will seek and find cases which are not reached by physicians or other agencies. She will not interfere with the practice of any physician, but, on the contrary, she will educate the people to seek advice for conditions which they now almost entirely neglect.

Public health work is a specialty to which physicians in private practice may well aspire. The position of health officer is developing into that of a sanitary expert. If physicians will feel that they are a part of the department of health, the department in turn will support them, assist them in their difficulties, and aid them in their treatment of diseases. The active co-operation of physicians with health officers and with the officials of the State Department of Health will be for the benefit of physicians themselves as well as the public.

# EDITORIAL

## MORE TWILIGHT SLEEP.

UNDER date of February 7th the New York *Times* prints a communication from one signing himself "Ex-Medicus" (or is it herself?) proposing that twilight sleep shall be legally required of physicians. Starting with the theorem that it has been practiced successfully abroad for ten years, that it has been successful in about 80 per cent of the cases tried here and that out of 10,000 cases there was no greater proportions of unfavorable results than where it was not given, we are asked to accept the conclusion that its value has been sufficiently proven so that it should be demanded of all physicians. Indeed the suggestion is offered that failure to use the method should be legally regarded as professional malpractice. Now all this is essentially hysterical babble, the outcome of a partial comprehension of published facts combined with misinterpretation or gross ignorance of the method and its limitations. Even those physicians who most enthusiastically advocate the method acknowledge its limitations and are most careful to emphasize the necessity of careful training under adequate supervision before attempting narcosis and then only in the best of surroundings. It is, of course, natural, that every woman who has successfully passed through a twilight delivery will be prejudiced in its favor, but there is the inevitable proportion of failures still to be considered. The appreciable danger to both mother and child from the use of such powerful narcotic drugs must be eliminated before the universality of the method can be recognized. It would have been just as foolish to make chloroform a compulsory part of the management of labor when it was first announced seventy years ago. The twilight method is for many patients a distinct advantage, but it is not a perfect method for universal application and therefore its use must be left to the ripened judgment of the experienced obstetrician.

It is not altogether fair, either, to characterize the unwillingness of the medical profession to accept this method unreservedly as "barbaric," nor to show elation because the lay press has been the instrument by which it has been forced upon the medical profession. The medical profession has over and over again been overwhelmed by efforts of the lay press to make it swallow some new and untried discovery, and it has learned from bitter experience not to give itself up unreservedly to the unquestioning credulity which is so distinctive a characteristic of the American public. We have not forgotten the part played by the public press in the exploitation of the Friedman cure and we should be praised and not blamed if as a profession we demand indisputable proof before we accept anything untried even though it is labeled "made in Germany." It would be better for the American people if the contemporary press could also show a similar wise conservatism and wait for the fullness of time before heralding the birth of so many prodigies that long before maturity betray their essential citrous make-up under an extremely thin layer of tinsel.

Twilight sleep will assume its proper place in spite of both popular hysteria and medical ultra-conservatism. Instead of blaming the doctors for holding back, give them credit for that quality which is supposed to characterize the State of Missouri; if it is laudable among the laity it is equally so among the doctors. H. G. W.

## PROBLEMS OF CHILDHOOD.

AMONG the more troublesome questions that are not infrequently propounded to the family physician are those of anxious parents worried because of abnormal tendencies in growing children. "What shall I do with my boy?" He is growing dishonest, or untruthful or it may be immoral. At first glance it would seem that these are not questions which should properly be propounded to a physician, for they could hardly be considered as having to do with the health of the child, and yet they are asked and the physician has usually to confess himself unqualified to help. In certain neurotic conditions surgery has been resorted to, as in those cases where circumcision has been undertaken to relieve habit spasm and allied states, but often without due consideration. Many students of childhood are coming to the conviction that there is a physical basis for many cases of moral squint, as is well illustrated by the case of a boy of eleven, an exceptionally attractive, bright and promising child in whom two traits developed with alarming rapidity and proved uncontrolable by the ordinary means of discipline—lying and theft. The methods of psychanalysis usually employed in the study of adults failed to discover a cause in this boy who moreover seemed to be well up to the average in his physical makeup. Repeated attempts at correction proved futile, his thieving became more and more bold and crafty and he developed a constant mendacity that finally determined an unusual step. After repeated observation by an able, experienced physician in a neighboring city, who was peculiarly well skilled in psychology, it was determined to withdraw the boy from school and from his home and place him among strangers where he was compelled to earn his living out of doors at the age of twelve, as it was believed that his physical had fallen behind his mental development and that an abnormal appetite, especially for sweets, prompted his thefts. After two years the boy has developed physically, has learned to control his evil tendencies and promises to become a wholesome and well-rounded man. His mental and intellectual growth had been overstimulated at the expense of lagging physical development.

If this somewhat extreme case be taken as a base upon which to build a hypothesis, it is not unreasonable to argue that children who show some slight variation from the hard and fast classification adopted for grading in schools should be considered in somewhat the same way and studied with a view to the elimination of physical defects before being punished for failure to keep up with their classes in school. If one may accept the views of a number of progressive teachers in the lower grammar and primary grades, it may be assumed that the next few years will see a material change in the method of teaching, especially in promotions. Already several classes for abnormal children have been established in public schools and private schools are springing up in which grading is attempted in a very general way only. If a child does well in arithmetic but poorly in history, he is not compelled to repeat the lessons of the past term because of failure to advance, but is carried on, advancing normally in his favorite studies and more slowly in those that he does not grasp. If one believes that mental astigmatism exists because of asymetry in growth, it is only fair to approach the problems of abnormal children with the conviction that a bodily cause can be found and to devote a most careful and painstaking analysis to each physical function in order to determine whether it measures up to the requirements of the growing mind. Abnormalities that are producing irritation, such as adenoids, bad teeth, defective vision, digestive disturbances, etc., must be promptly corrected and time enough devoted to the individual case to assure oneself that the demands of schooling are not beyond the reserve energy of the child to supply.

In the home life the same test should be applied to the daily routine and errors of conduct studied to see whether they may not have their origin in some physical defect. Knowing, as we now do, what marked influence is exerted upon growth by the secretion of the pituitary, thyroid and adrenal bodies and by the gonads the effect of irregularities in their secretion in children should receive more attention. It is more than likely that laziness and inattention are not evidences of original sin but are the result of faulty metabolism, possibly of biliary or gastrointestinal origin, while a persistent thymus may be the unsuspected source of mental dulness as well as physical status lymphaticus. A slight degree of hypothyroidism may be as common in children as in adults and may possibly play a more important role than is generally thought. Cretinism is by no means the only manifestation of abnormal thyroid development. Pediatrics is rapidly assuming a position of prime importance in medical practice and it is time that its principles should be applied more generally to these neglected problems in the development of the child.

## RIGHT OF WAY FOR AUTOMOBILES.

PROPOSALS on the part of the New York Board of Aldermen to impose certain restrictions upon pedestrians have evoked somewhat heated editorials in the daily press on the divine right of the wayfarer to walk where he pleases. As the matter has some practical interest for physicians who use automobiles, it might be profitable to consider the subject from the point of view of the man who drives. It may be safely premised that a large part of traffic accidents to pedestrians—we may guess at a third—is the result of utter carelessness upon their own part usually occasioned by their sudden determination to step from the curb without due consideration of what may be coming. We do not here consider children, who can hardly be regarded as responsible, but adults, some even being men. Every driver can testify that but for his watchfulness the number would be infinitely greater. In the metropolitan district the automobilist is regarded as an outlaw; it is true he pays to the State a tax varying with the horsepower of his engine, which is supposed to insure him certain privileges, notable among them being a picturesque and striking license tag; in addition he is permitted to regard his automobile as a personal asset taxable under the Federal Income Law, and in return for these special taxes he is rigidly restricted by law to certain rates of speed and to certain fixed courses (many of which he must recognize by intuition) and, when all is said and done, in the event of an accident the sympathy of the jury is invariably with the pedestrian; and unless the automobilist has protected himself with an expensive liability insurance, he must pay out of his own pocket for defending himself even though he is known to be in the right. Indeed so clearly is this recognized that the average man who has had an accident that is clearly not his fault is more than ready to pay reasonable blackmail in return for a release that will save his going to court.

On the other side of the picture the pedestrian has certain spaces set aside for his exclusive use for which, unless he be a property owner, he pays nothing. He has the right of way at definite crossings, also without expense. He may enter upon and leave trolley cars with security and he claims the right for himself and his children to utilize the entire street, not only for legitimate travel but for games of all sorts, for roller skating, or for any other purpose that suits his fancy. It is perfectly proper, in a land where a man's personal liberty is recognized, for him to do as he pleases in regard to crossing streets—if he pleases he may cross the railroad tracks at his personal peril—but why should the driver of a vehicle using ordinary precaution and threatened by all manner of ordinances restricting his movements be less free and burdened with greater responsibility than the pedestrian who pays nothing and is unhampered by law? If it is fair to hold a driver of a vehicle to certain restrictions, it is equally fair that the pedestrian should also be made responsible for his own movements. If he chooses to dash across a roadway in front of an approaching car, at least it should be made evident that by that act he puts himself outside the protection of the law. The maudlin babble that is constantly being poured forth in behalf of the downtrodden wayfarer is a form of sentimentality calculated only to get votes. It is time that the rights of the drivers of vehicles should be recognized and that a definite responsibility should be placed upon the pedestrian so that in the event of accident there shall be no doubtful question of blame with the preponderance of sympathy against the man on the box in favor of the man in the street. Berlin and some other European cities have adopted a traffic rule requiring a pedestrian about to cross a street anywhere between intersecting streets to face squarely and proceed at right angles to the curb. If he neglects this precaution he must assume the responsibility for accident. It seems an excellent rule and deserves a trial. H. G. W.

# Obituaries

DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

## EDWARD HODGES, M.D.

Born in Staten Island, N. Y., January 16, 1870, and died in Brooklyn, N. Y., October 30, 1914, he was the son of Edward Hodges and Alicia Ellen Mayne, both of England. His early education was received in the Military Institute of New York. His medical education was under the direction of E. H. Quinn, M.D. His degree of M.D. was received at the Long Island College Hospital in the class of 1895. This was followed as interne in St. John's Hospital. During his professional life he was assistant surgeon of the Twenty-third Regiment, N. G., N. Y., Surgeon to the Atlantic Avenue Dispensary and House of St. Giles for Cripples. Physician to the Swedish and Samaritan Hospitals.

He was a member of the Medical Society, County of Kings, from 1896 to 1913; Associated Physicians of Long Island 1904 to 1914; Brooklyn Society for Internal Medicine; Long Island Medical Society; Alumni of St. John's Hospital; Association of Military Surgeons; Veteran Association of the Twenty-third Regiment, N. G., N. Y. Euclid Lodge, No. 636, F. & A. M., of which he was Master. Dr. Hodges is survived by his widow Harriet. W. S., Sr.

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## STEPHEN CLARENCE PETTIT, M.D.

Born in Brooklyn, N. Y., September 18, 1871, where he died on December 3, 1914, in the section known as Gravesend; he was the son of Stephen Bedell Pettit, and Jane Augusta Stout both of New York.

His early education was received in Wesleyan Academy and the Brooklyn Polytechnic Institute.

His medical education was under the direction of Henry S. Pettit, M.D., graduating at the Long Island College Hospital in the class of 1895. This was followed as interne at the Kings County Hospital and the Lying-in Hospital. For a time he was physician to the City Dispensary.

He was a member of the Medical Society, County of Kings from 1895 to 1911; Brooklyn Medical Society 1903 to 1914, and the Brooklyn Pathological Society.

He is survived by his widow Maude and two children, Donald and May Adeline Pettit. W. S., Sr.

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## JOHN F. HALPIN, M.D.

Born in Brooklyn, N. Y., in 1877, where he died September 4, 1914, he was educated in the Public Schools and the New York College of Pharmacy. His medical education was received at Bellevue Hospital Medical College, where he received his degree of M.D. in the class of 1899.

He was physician to the E. D. Hospital and Dispensary and a member of the Brooklyn Medical Society from 1904 to 1914.

W.S., Sr.

## FRANKLIN PIERCE MILLER, M.D.

He was born in Wisconsin in 1855, and died in Brooklyn, N. Y., October 17, 1914. He was educated at the New York University where he received his degree in 1876. He was a member of the Medical Society County of Kings, from 1890 to 1910; Brooklyn Medical Society from 1899 to 1914; American Medical Association and for a number of years physician to the Bushwick Hospital.

A member of Acanthus Lodge, No. 719, F. & A. M., and Aurora Grata Consistory, A. A. S. R.

W. S., Sr.

## ANDREW DICKSON PACKER, M.D.

Born in the city of Brooklyn in 1879, he was educated at Yale University receiving the degree of A.B., in the class of 1902. His medical education was at the Long Island College Hospital.

He was married to Miss Sophie Graham Booker of Lexington, Va., on August 11, 1911.

He was a member of the Associated Physicians of Long Island, 1914-15.

He was the son of the late William S. Packer and Mary K. Packer.

Dr. Packer died in Brooklyn, N. Y., February 1, 1915.

W. S., Sr.

## BENJAMIN AVERY SEGUR, B.S., M.D.

Born in Killingly, Conn., July 23, 1833, the son of Benjamin Segur and Martha Congdon, and died at St. Legier, Sur Verey, Switzerland, February 14, 1915. He was educated at Racine College, Wisconsin, where he received the degree of B.S. in 1855. His medical education was at the College of Physicians and Surgeons, New York City, graduating in the class of 1860. This was followed as interne at Bellevue Hospital from 1861 to 1862; in the latter year he was appointed assistant surgeon in the United States Army, remaining until 1866, when he entered upon private practice at Boonton, N. J. In 1868 he came to Brooklyn, N. Y., where he remained until his retirement from active practice.

During his professional life he was physician to St. Peters Hospital from 1875 to 1886, when he was made consulting physician; similar position at St. Mary's Hospital. From 1873 to 1875 he held the position of Sanitary Superintendent of the Brooklyn Health Department, his associates being the late Joseph C. Hutchison, M.D., LL.D., John T. Conklin, M.D., and Gen. Jordan.

In 1869 he became a member of the Medical Society, County of Kings, and remained until his retirement from practice in 1891, during which time he held the position of Alternate Orator in 1871, Vice President in 1873, Orator in 1874, Censor in 1875-79-80-81-82, and Assistant Secretary in 1877.

In 1870 the Brooklyn Pathological Society was organized, Dr. Segur being one of the eleven at the formation of that society. He was also a member of the New York Physicians Mutual Aid Association and the Kings County Medical Association.

Dr. Segur was married to Lucy Darrell, who, with a son, Darrell Segur, survives him.

His medical papers are as follows:

1873. Disinfection.
1876. Filth in Cities and Villages.
1877. The Prevalence of Unrecognized Chronic Brights Disease.
1878. Microscopic Examination of Urine.
1880. Prophylaxis of Puerperal Convulsions.
1884. Intestinal Obstruction.

W. S., Sr.

## CHARLES WILLIAM BRUNNER, M.D.

Born in New York City October 31, 1855, and died in Brooklyn, N. Y., January 21, 1915. He was the son of John W. Brunner and Fredericka W. D. Scheimer, both of Germany.

After receiving his early education he entered the New York College of Pharmacy, from which he graduated with the degree of Ph.G. His medical education was under the direction of Charles G. Kochler, M.D., receiving the degree of M.D. from the Long Island College Hospital in the class of 1891.

He was a member of the Medical Society, County of Kings, from 1891 to 1896; Brooklyn Medical Society, 1912 to 1915; Associated Physicians of Long Island, 1911 to 1915; Hospital Steward 47th Regiment, N. G., N. Y.; Putnam Phalanx of Hartford, Conn.; Polar Star Lodge, No. 245, F. & A. M.; Brooklyn Consistory, and DeWitt Clinton Commandery, No. 27, K. T.

Dr. Brunner was married to Rose Smith of Hartford, Conn., October 28, 1884. His children are Dorothea E. and Vera Brunner.

W. S., Sr.

## ALBERT BRINKMAN, M.D.

Born in New York City July 16, 1861, and died in Brooklyn, N. Y., December 7, 1914. His father was John Brinkman and his mother Elizabeth Wohlers, both of Germany. He was educated at St. Mathews Academy and the University of New York, where he received the degree of M.D. in the class of 1883. His medical practice has been at all times in this city. For a number of years he held a position as surgeon to the Brooklyn Eye and Ear Hospital, and during the years of 1883-84 was interne at Charity Hospital.

A member of the Medical Society, County of Kings, from 1892 to 1899, and the Associated Physicians of Long Island from 1909 to 1912. A member of Montauk Lodge, No. 286, F. & A. M.

W. S., Sr.

## CHARLES JOSEPH STARK, JR., M.D.

Born in New York City April 7, 1881, and died in Brooklyn, N. Y., February 11, 1915. He was the son of Charles J. Stark of Germany and Caroline Billhardt of New York.

He was educated in the schools of this city, and the Brooklyn College of Pharmacy, where he received the degree of Ph.G. in 1902, and the degree of M.D. from the Long Island College Hospital in 1912. This was followed as interne at St. Mary's Hospital, Jamaica. He practiced medicine at Woodhaven, L. I., and was a member of the Brooklyn Medical Society from 1914 to 1915.

W. S., Sr.

# Society Transactions

## ASSOCIATED PHYSICIANS OF LONG ISLAND.

### Minutes of the Fifty-first Regular and Seventeenth Annual Meeting.

The Fifty-first Regular Meeting (Seventeenth Annual Meeting) was held at the Library Building of the Medical Society of the County of Kings, Saturday, January 30, 1915. The President, Dr. James P. Warbasse, called the meeting to order at two-thirty, there being about fifty members present. As the minutes of the October meeting have been published in the Long Island Medical Journal the reading was dispensed with. The Chairman of the Membership Committee, Dr. Albert M. Judd, presented the following names for action by the Society.

*Proposed by Burton Harris.*

| | |
|---|---|
| George Burkard | 1516 Greene Avenue, Munich, 1903 |
| Joseph E. Golding | 233 Stuyvesant Avenue, N. Y. U., 1903 |
| John G. Kraus | 121 Gleane Street, Elmhurst, L. I. C. H., 1912 |
| James J. Crawford | 311 Gama Street, Glendale, Jefferson, 1907 |
| Anton F. Mannel | 923 Bushwick Avenue, N. Y. U., 1914 |
| William F. McKenna | 36 Clark Street, L. I. C. H., 1913 |
| Arthur C. Holzman | 314 Sumner Avenue, P. & S. N. Y., 1906 |
| William C. Haupt | 979 Lorimer Street, U. & B. N. Y., 1907 |
| Edwin F. Gissler | 32 Cedar Street, N. Y. Eclec., 1907 |
| Albert E. Schwallie | 217A Eighteenth Street, Cornell, 1910 |
| Charles H. De Lancey | 186 Prospect Place, P. & S. N. Y., 1891 |
| John P. Schneble | 406 Benedict Avenue, Woodhaven, L. I. C. H., 1908 |
| John B. D'Albora | 83 Clermont Avenue, L. I. C. H., 1912 |
| Henry C. Eichacker | 2355 Putnam Avenue, L. I. C. H., 1914 |
| Emil Frei | 24 Linden Street, P. & S. N. Y., 1892 |

*Proposed by Irving F. Barnes.*

| | |
|---|---|
| Henry F. Parker | Rockville Centre, Jefferson, 1883 |

*Proposed by James Cole Hancock.*

| | |
|---|---|
| H. Wright Benoit | 144 Lefferts Place, McGill, 1909 |
| Charles A. Steurer | Port Washington, L. I. C. H., 1910 |
| Julien Dean | Freeport, L. I. C. H., 1904 |
| Henry F. Adams | 32 Palmetto Street, P. & S. N. Y., 1890 |
| Edward H. Squibb | 148 Columbia Heights, P. & S. N. Y., 1881 |
| B. C. Andrews | Islip, N. Y. Eclec., 1911 |
| George E. Beatty, Jr. | 1 Avenue C. West, L. I. C. H., 1912 |

*Proposed by Albert M. Judd.*

| | |
|---|---|
| Louis M. Dusseldorf | 392 Union Street, L. I. C. H., 1888 |
| Charles J. Lundbeck | 107 Bergen Street, N. Y. Eclec., 1883 |
| Cornelius J. Noonan | 554 Henry Street, P. & S. N. Y., 1900 |
| Albert J. Keenan | 251 New York Avenue, P. & S. N. Y., 1902 |
| John B. Meury | 785 Bushwick Avenue, L. I. C. H., 1906 |
| Abraham Klein | 233 Clermont Avenue, L. I. C. H., 1908 |
| Edward J. Murphy | 465 Fifteenth Street, P. & S. N. Y., 1904 |
| Aaron Roth | 1493 Eastern Parkway, U. & B. N. Y., 1908 |
| Frank B. Keleher | 115 Sixth Avenue, L. I. C. H., 1895 |
| Frank H. Knight | 59 Seventh Avenue, P. & S. N. Y., 1899 |

The above applicants were elected to membership.

It was moved, seconded and carried that in future no name should be acted upon at any meeting if such name had not been printed and sent to the members prior to the meeting.

The Chairman of the Membership Committee, Dr. A. M. Judd, during the Scientific Session, requested the Chair to grant a recess for the purpose of taking action upon the following motion, viz., That all names not printed upon the list of applicants sent out at the time of sending notices of the Fifty-first Regular Meeting should be carried over for final action at the meeting to be held in June, 1915. This motion was duly seconded and carried by the Society.

The report of the Historical Committee was received and ordered filed.

## Report of the Historical Committee.

*To the President and Members of the Associated Physicians of Long Island:*

In presenting this my annual report of the Historical Committee, for the year 1914, it is a pleasure to note the material advances made during the year: it is but natural to expect that with a larger membership the death rate should also increase, still the year 1914 does not show such an increase.

Our first duty should be at all times to show a proper respect to the memory of those of our former associates who have been active members of our association, and who have completed their life work among us. With this feeling of respect their names are herewith recorded:

| *Date of Membership.* | | *Date of Death.* |
|---|---|---|
| 1900-1914 | Stanley Howard MacGillvary, M.D. | February 16, 1914 |
| 1898-1914 | George McNaughton, M.D. | March 17, 1914 |
| 1900-1902 | Francis Sudlow Kennedy, M.D. | March 17, 1914 |
| 1905-1911 | Patrick J. McKeown, M.D. | May 3, 1914 |
| 1901-1914 | Sidney Herbert Gardiner, M.D. | June 11, 1914 |
| 1899-1914 | Henry MacDonald, M.D. | July 22, 1914 |
| 1904-1914 | Edward Hodges, M.D. | October 30, 1914 |
| 1909-1912 | Albert Brinkman, M.D. | December 7, 1914 |
| 1912-1914 | Stephen Clarence Pettit, M.D. | December 3, 1914 |

During the year the names of eighty-six physicians have been presented for membership representing the following named medical colleges and universities:

Long Island College Hospital, 21; College Phys. & Surg., N. Y., 14; Albany Medical College, 1; Buffalo Medical College, 1; Michigan School of Medicine, 1; Maine School of Medicine, 1; Jefferson Medical College, 1; Baltimore College Phys. & Surg., 1; Bellevue Hosp. Medical College, 1; Dartmouth Medical College, 1; Chicago Homœpathic Medical College, 1; Hahnemann Medical College, Phila., 2; New York Homœpathic Medical College, 11; New York Eclectic Medical College, 2; University, Missouri, 1; University, Cornell, 8; University and Bellevue, 2; University, New York, 3; University, Yale, 1; University, Syracuse, 2; University, Geo. Washington, 1; University, Baltimore, 1; University, Boston, 1; University, John Hopkins, 1; University, Michigan, 1; University, Virginia, 1; University, Fordham, 1; University, Georgetown, 1; University, Naples, 1; University, Christiana, 1. Total, 86.

During the year the work of the Historical Committee has proceeded as in former years, and the record so far compiled will be found in the reading room of the Library of the Medical Society of the County of Kings.

The LONG ISLAND MEDICAL JOURNAL has published a short obituary notice of our deceased members during the year.

My relations to the members of the Society during the year has as in former years been pleasant and agreeable in every particular, and it is but just at this time to say, that the Secretary of the association has been ready at all times to assist in the work of this department.

My wish is that the Association continue to prosper in the future, as in the past.

WILLIAM SCHROEDER,
January, 1915. *Chairman of the Historical Committee.*

## Report of Publication Committee.

January 30, 1915.

*Mr. President and Gentlemen:*

The Publication Committee desires to make the following report:

Since you have actual evidence, twelve times during the year, of the quality of the JOURNAL we need not comment except to say that we believe that every one agrees that the JOURNAL has decidedly gained in quality.

It is a better journal today than it was one year ago.

As to its financial standing:

You are all familiar with the difficulties of business during the last twelve months; most of us have personal knowledge of the depression that has existed, This has made it harder to maintain the JOURNAL since it is supported so largely by the advertising that it carries.

It has been difficult this year to secure new advertising and difficult or impossible to collect some of its bills. The dues of one year have been used to square the accounts of the previous year. This is the way we have had to get along. Not the best business way but we have had to do it for several years. In good times it worked out all right. In hard times it pinches somewhat.

A little review of the finances will be of interest.

| | |
|---|---|
| For the year 1912 it cost to maintain the JOURNAL....... | $4,359.00 |
| Advertising for 1912 brought to the JOURNAL........... | 2,579.00 |
| For 1913 it cost to maintain the JOURNAL............... | $5,280.00 |
| Advertising for 1913 brought to the JOURNAL........... | 3,379.00 |
| For 1914 it cost to maintain the JOURNAL............... | $5,793.00 |
| Advertising for 1914 brought to the JOURNAL........... | 3,933.00 |

An examination of these figures shows that during the three years that your committee has been familiar with the JOURNAL, the cost has increased from $4,359.00 for 1912, to $5,280.00 for 1913, to $5,793.00 for 1914.

The advertising has increased from $2,579.00 for 1912, to $3,379.00 for 1913, to $3,933.00 for 1914.

The net cost of the JOURNAL to the Association in 1912 was $1,780.00; for 1913, $1,901.00; for 1914, $1,860.00. The net cost of the JOURNAL for 1914 is only, therefore, $41.00 less than in 1913 in spite of a year of business depression and considerable expansion in the JOURNAL, notably, in taking on the publication of the Kings County Medical Society Bulletin and in sending copies of the JOURNAL to the members of the Kings County Medical Society who are not members of the Associated Physicians. This we think is a pretty fair showing.

For the future:—The Publication Committee have the pleasure to report that the Editor has voluntarily offered to edit the JOURNAL for the coming year, or until the JOURNAL has a surplus, without salary.

We want you to think of this magnanimous donation. No words of ours can express the gratitude that the Association owes Dr. Webster.

The steadily increasing membership and the resulting increasing income from dues and the large donation of Dr. Webster will soon make us so strong financially that all the vicissitudes and depression of business life will be as harmless as waves upon a rocky shore.

The committee believes in the JOURNAL. The Editor believes in the JOURNAL. It has hosts of friends and is reaching out for more. It is your JOURNAL.

We urge you to support it even better than before. Be proud of it. Talk for it. Help it to take its place in the 20th century medical literature.

(Signed) W. H. ROSS,
J. W. WINFIELD,
F. T. DELANO,
*Committee.*

The report of the Publication Committee was received and the Editor was thanked by the Society for the tender of his services without renumeration until the JOURNAL was in better financial standing.

Dr. Frank T. Delano stated that the Committee to Consider Raising the Annual Dues would report at a later meeting.

The Auditing Committee presented the following report which was accepted and ordered filed:

### REPORT OF AUDITING COMMITTEE.

Your Auditing Committee begs to report that it has examined the books of Dr. Edwin S. Moore, Treasurer, and finds them correct.

Your committee feels that it cannot pass by the opportunity of commenting upon the most excellent manner in which the financial records for the past year have been kept, and also takes this opportunity to commend the work of Dr. Moore, and thank him for the painstaking labor which he has expended.

(Signed) CHARLES EASTMOND,
FRANK T. DELANO,
WARREN L. DUFFIELD,
*Committee.*

The report of the Secretary was accepted and ordered filed.

### Report of Secretary.

Mr. President:—Your Secretary reports that during the past year the usual meetings have been held and well attended. During the year 132 names have been added to the membership roll, 11 from Queens, Nassau and Suffolk Counties and 121 from Kings. The total membership at present is 909, of which 10 are honorary and 899 active members. Of the active members 221 are from Queens, Nassau and Suffolk Counties and 678 from Kings County. There have been 13 resignations and 6 deaths.

Respectfully submitted,
James Cole Hancock, *Secretary.*

The Treasurer's report was accepted and ordered filed.

### Treasurer's Report.

Associated Physicians of Long Island, Treasurer's Report from January 1, 1914, to January 1, 1915. Income from the Association and the Long Island Medical Journal:

| | |
|---|---|
| ***Income.*** | |
| Balance on hand, January 1, 1914 | $215.10 |
| Received from dues | 2,163.00 |
| Received from advertising | 3,927.81 |
| Received from Outing | 784.75 |
| Subscription to Journal | 5.20 |
| Loan | 1,000.00 |
| To reimburse a loan | 1,000.00 |
| | $9,095.86 |
| ***Expenditures.*** | |
| Paid Brooklyn Eagle | $3,176.63 |
| Miller Wright & Co | 528.93 |
| Vernon Co. | 32.78 |
| Oruppu | 43.01 |
| Salaries | 1,696.66 |
| Petty cash—postage | $158.16 |
| Commission for ads | 692.75 |
| Loans paid | 1,700.00 |
| Discounts on Notes | 13.75 |
| Secretary—postage, printing, etc | 72.85 |
| Printing for June Meeting | 88.20 |
| Outings | 776.04 |
| Hunter Collins Co | 27.50 |
| Printing | 40.75 |
| Kings County Medical Society | 12.00 |
| | $9,060.01 |
| Balance on hand | 35.85 |
| | $9,095.86 |

(Signed) E. S. Moore, *Treasurer.*

The report of the Legal Committee was accepted and ordered filed.

### Report of Legal Committee.

Your Legal Committee has had nothing before it of importance, with the exception of the so-called Boylan Law, which became effective on the first of July last.

This law restricts the sale of hypodermic syringes and habit-forming drugs. While several of its provisions have caused the physicians some annoyance, and has been responsible for some friction, upon the whole it works out fairly well.

This law has made it exceedingly difficult for the individual to secure in this state any habit-forming drugs, such as morphine, cocaine and heroin.

By direction of the President, your committee has consulted with the author of the bill with the end in view of having certain amendments made with particular reference to the commitment of habitues.

As the law now stands, any magistrate in Brooklyn, or elsewhere, can commit a habitue to any hospital in the state regardless of its character; for instance, morphine habitues can, under the law, be committed from Brooklyn to the Tuberculosis Hospital at Ray Brook, or to a Foundling Asylum in Buffalo; on the other hand, a justice of the peace can make no commitments. This fact, of course, works a hardship on those living in rural districts.

Senator Boylan has agreed to introduce amendments to the law which will make commitment of habitues more comprehensive, and which will meet with the regulations of the State Hospital Commission which has control over the admission of patients to the State Hospitals for the Insane.

Your committee has managed to successfully establish very friendly relations with the Bill Drafting Commission at Albany, to the end that your committee will be immediately provided with any bills drawn having to do with the matters of interest to your profession.

Your committee requests that the members of the Association be not backward in coming forward with any business or propositions that your Legal Committee can handle.

The President then made the following recommendations. It was moved, seconded and carried that a committee of three consisting of Doctors J. M. Winfield, William Browning and H. B. Delatour, be appointed by the Chair to consider these recommendations and to report at the June meeting.

### Recommendations to the Associated Physicians of Long Island.

By J. P. Warbasse.

1. The names of all candidates recommended for election to membership by the Membership Committee shall be published either in the Long Island Medical Journal, or sent to each member of the Society before the meeting at which such candidates can be acted upon.

2. One of the objects of the Associated Physicians of Long Island shall be the education of the public in matters pertaining to health, hygiene and medicine. With this object in view, the Committee on Public Health shall have added to it, members whose function shall be giving public lectures upon these subjects. Long Island should be divided into districts, each district having in it a member of the Public Health Committee, whose duty shall be speaking before civic organizations, schools and other social bodies. The Committee on Public Health should not rest simply with having lectures prepared and at the service of the public when called upon, but it should be the duty of this committee to take the initiative and arrange with such public bodies and social groups for lectures.

3. The President of the Associated Physicians should be elected for a period of two years, for the reason that a period of one year in an organization having only three meetings a year does not provide opportunity enough for the development and execution of any definite policy. The position of President under the present laws is largely an honorary one—more for his honor than for the good of the Society. A president should be elected for the purpose of securing the best service from him in the interest of the Society, rather than bestowing this office upon a member for the purpose of honoring him.

4. The Recall, Initiative and Referendum with reference to all officers, by-laws and acts of the Society should be in the hands of the members.

There was no unfinished business except the raising of the annual dues.

*New Business.*—The following resignations, 13 in number, were presented and accepted with regret:

Dr. G. H. Treadwell,
Dr. J. C. Ditmars,
Dr. J. E. Blake,
Dr. E. C. Gilbert,
Dr. F. H. Miller,
Dr. William Engel,
Dr. E. C. Bernauer,
Dr. R. T. Wheeler,
Dr. W. H. Steers,
Dr. F. M. Sharpe,
Dr. E. A. Dawson,
Dr. Carl Schumann,
Dr. J. E. McCoy.

The Nominating Committee reported as follows:

### Nominations.

President, Dr. Guy H. Turrell, Smithtown Branch.
First Vice-President, Dr. Dudley D. Roberts, Brooklyn.
Second Vice-President, Dr. Carl J. Schmuck, Lawrence.
Third Vice-President, Dr. Lefferts A. McClelland, Brooklyn.
Secretary, Dr. James Cole Hancock, Brooklyn.
Treasurer, Dr. Edwin S. Moore, Bay Shore.

There being no nominations from the floor, it was moved, seconded and carried that the Secretary cast one ballot for the election of the above, which was done.

The Scientific Session was presided over by Dr. James P. Warbasse, who announced that the reader of the first paper, Mr. Benjamin C. Marsh, B.A., Executive Secretary of the New York Congestion Committee, was absent owing to illness. Mr. Howard D. Marsh, Ph.D., of the Department of Philosophy, College of the City of New York, read a paper entitled "Fatigue in Relation to Efficiency." S. Adolphus Knopf, A.B., M.D., Professor of Medicine, Department of Phthisiotherapy, New York Post-Graduate Medical School, read a paper entitled "Tuberculosis as a Social Disease." The third paper was read by Mr. Owen R. Lovejoy, A.M., General Secretary, National Child Labor Committee, on "Child Labor from a Health Standpoint."

At the suggestion of Mr. Lovejoy, the following resolutions were adopted by the Associated Physicians of Long Island:

WHEREAS, The premature employment of children in manufacturing, mining and other wage-earning industries is well-known to be an injury to their health and physical well-being as well as to their preparation for future citizenship; and,

WHEREAS, There is pending in Congress of the United States a bill known as the Palmer-Owen Bill designed to forbid interstate commerce of goods produced by the labor of children under fourteen years of age, or by children employed for excessive hours under sixteen years of age; therefore, be it

*Resolved,* That the Associated Physicians of Long Island endorse the measure and urge upon the Senators from New York State and the Congressmen from Long Island their personal influence and vote in favor of this bill.

*Resolved,* That a copy of these resolutions be transmitted to the Senators and Congressmen aforesaid and that the individual members of this Association also use their influence in furthering the measure.

A copy of this resolution was forwarded to each member of Congress from Long Island.

Adjournment.

The dinner was served at Montauk Club and was a very successful affair. The three speeches of the evening: "What Shall the Community Expect of the Doctor," by Henry Neumann, Ph.D.; "The Socialization of Medicine," by Woods Hutchinson, M.D., and "The Associated Physicians," by Guy H. Turrell, M.D., were particularly appropriate and were most thoroughly appreciated and fully enjoyed by all who were fortunate enough to hear them.

JAMES COLE HANCOCK, *Secretary.*

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

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MARCH, 1915

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### MINUTES OF STATED MEETING, FEBRUARY 16, 1915.

The President, Dr. Russell S. Fowler, in the chair. There were 360 present. The meeting was called to order at 8.30 P. M., and the minutes of the previous meeting were read and approved.

#### *Report of Council.*

There having been no quorum of the Board of Censors at its regular meeting, February 10, 1915, the Council was unable to report upon applications for membership.

#### *Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

John J. Delaney, 1221 Avenue O; Univ. and Bell., 1909; proposed by R. N. Prentiss; seconded by Membership Committee.

Hyman L. Ratnoff, 447 Saratoga Avenue; Cornell, 1906; proposed by I. D. Kruskal; seconded by Membership Committee.

#### *Applications for Membership.*

Applications for membership were received from the following:

Walter J. Campbell, 384 Union Street; L. I. C. H., 1899; proposed by J. J. Sheehey; seconded by Membership Committee.

George A. Clark, 348a Ninth Street; L. I. C. H,. 1898; proposed by J. J. Sheehey; seconded by Membership Committee.

Wm. Henry Cook, 749 Bedford Avenue; L. I. C. H., 1912; proposed by E. L. Schaefer; seconded by C. Fulda.

Aurealius De Yoanna, 565 Henry Street; Bellevue, 1897; proposed by J. J. Sheehey; seconded by Membership Committee.

Gaetano De Yoanna, 565 Henry Street; L. I. C. H., 1908; proposed by J. J. Sheehey; seconded by Membership Committee.

Henry J. Dilberger, 432 Ninth Street; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee.

George G. Fisher, 231 Hancock Street; Laval Univ., 1906; proposed by E. J. McEntee; seconded by J. C. Kennedy.

Anton F. Manuel, 923 Bushwick Avenue; Univ. and Bell., 1914; proposed by E. L. Schaefer; seconded by C. Fulda.

Nicholas J. McCaul, 278 Ninth Street; Balt. Med. Coll., 1906; proposed by J. J. Sheehey; seconded by Membership Committee.

Joseph P. Menasse, 592 Henry Street; L. I. C. H., 1906; proposed by J. J. Sheehey; seconded by Membership Committee.

Wm. B. Rosecrans, 1494 Greene Avenue; Albany, 1901; proposed by R. S. Fowler; seconded by Membership Committee.

Julius Schlein, 382 Union Street; L. I. C. H., 1906; proposed by J. J. Sheehey; seconded by Membership Committee.

Cornelius A. Schmid, 370½ Pacific Street; L. I. C. H., 1913; proposed by S. J. McNamara; seconded by Membership Committee.

Wm. Fred. Walenta, 396 Graham Avenue; L. I. C. H., 1911; proposed by R. S. Fowler; seconded by Membership Committee.

Joseph F. Ward, 405 Tenth Street; Balt. Univ., 1899; proposed by J. J. Sheehey; seconded by Membership Committee.

### *Scientific Session.*

Paper: "Implantation of Cartilage and Vulcanite in the Nasal Septum." (With lantern slide demonstration.)
By Alexander C. Howe, M.D.

Paper: "Acute Osteomyelitis."
By James P. Warbasse, M.D.

Address: "Some of the Relations of the Profession of Medicine to the Municipal Government."
By Hon. George McAneny.
President of Board of Aldermen.

On motion, by Dr. J. Richard Kevin, a unanimous vote of thanks was given to Mr. McAneny.

### *Miscellaneous Business.*

The following resolutions, introduced by Dr. William J. Cruikshank, were adopted by unanimous vote:

Whereas: It is a scientific fact that vaccination by bovine lymph is sure protection against smallpox, and

Whereas: In recognition of this fact, legislation making vaccination compulsory was enacted in Bavaria in 1807, in Denmark in 1810, Sweden, 1814; Wurtemburg, Hesse and other German States in 1818; Prussia in 1833; the United Kingdom in 1853; German Empire in 1874; Roumania in 1874; Hungary in 1876; Servia in 1881; Austria in 1886; and that vaccination against smallpox has become the usual practice in France, Italy, Spain, Portugal, Belgium, Russia, Turkey and in many States within our own borders, Massachusetts making it compulsory as early as 1809 and New York in 1893, and

Wheras: A bill known as the Tallett-Jones bill has been introduced into the legislature of the State of New York, and

Whereas: The passage of this bill would nullify the present law governing the vaccination of children about to enter our schools, thus creating in our State, within a few years, the majority an unvaccinated population, and

Whereas: This bill provides for the vaccination of school children *only* in the event of the actual presence of smallpox, in the community, and

Whereas: The dangerous period of incubation of smallpox and the period necessary for the incubation of cowpox are thus completely disregarded, and

Whereas: On February 10, 1915, The Department of Health of the State of New York through its Commissioner, Dr. Hermann Biggs, appeared before a joint committee of the Senate and Assembly and spoke in support of the bill, therefore be it

*Resolved*: That the Medical Society of the County of Kings declares itself not in accord with the position here taken by the Department of Health of the State of New York, and be it further

*Resolved*: That the Medical Society of the County of Kings declares itself unalterably opposed to the Tallett-Jones bill, or any bill which will, in any manner or degree, lessen the protection by vaccination against smallpox, provided by the existing law, and, be it further

*Resolved*: That a copy of these resolutions be sent by the Secretary of this Society to the Governor of the State, to the Commissioner of Health of the State of New York and to each and every Senator and Assemblyman now representing Kings County.

Dr. Sylvester J. McNamara, Chairman of the Membership Committee, read the following report:

Mr. President, Ladies and Gentlemen: It affords the Chairman of the Membership Committee great pleasure to accept the invitation of the President to say a few words outlining the work of the committee and to call attention of all our members to the whirlwind campaign that has been inaugurated to complete our membership to its full quota, namely the inclusion of every legally qualified practitioner of good standing in Kings County.

The work before us is herculean and beset with difficulties but we would be willing to undertake it were its difficulties still larger and more numerous.

It presents nothing that is unsurmountable, but, on the other hand, has every argument of reason to support it and professional zeal to stimulate it. The motives that actuate us should appeal to the judgment of every honest and honorable practitioner.

Let me ask you. Do you realize what our profession would be without the existence of this Society? Without organization—County, State or National? And are you willing to reap the benefits of this organization without doing your share to perpetuate it; to have it include every one whose ideals and labors should be in common with ours?

So it behooves us not to take "No" for an answer, but to endeavor to educate our nonmember up to a realization of the necessity of organization and the great benefits accruing from membership in a representative body.

The Membership Committee is active and working as no Committee ever worked before. Thirty-five were present at our inaugural meeting. The activity displayed, the earnestness and eagerness to work along definite lines of policies argues well for the success of the whirlwind for 500 new members.

But the Committee needs and should have the encouragement of every member of this Society. We must have your co-operation. You say we have it. But we want it in some tangible form. Give it now.

The following is to be printed and a copy sent to each member of the Society and possibly to non-members. It is headed An Appeal that Should Interest You.

*An Appeal That Should Interest You.*

Next to family ties and the dear amenities of home, we should hold an unswerving allegiance to that profession we have adopted for our life work.

That man is unworthy of a profesion, or of any calling, whose interest is but lukewarm, whose sole desire is financial gain, and who is either careless of his own professional honor and probity, or belongs to that class of men who are indifferent to the wrong that others commit or advise, just so long as such wrongs interfere not with his own practices or his own income.

Time was when membership in the medical profession clothed a man, to the public view, as one distinguished in life, as much for his character and education as for his knowledge of the healing art.

Today, in every walk of life, we find men drunk with false theories, or following the chimeras which can have their outgrowth only from moral rottenness and nearly every channel of education, culture and honor—national, international and individual—is either polluted at its source, or so blocked by the work of evil minds, that small hope exists for the refreshing or regeneration of right thinking and acting.

But aside from the great questions, to the proper solution of which the general public conscience is fast being aroused, we, as members of the medical profession, have a serious duty ever calling on us for its proper performance, by which we are solemnly obligated to society, our profession, and ourselves, to use every available means to destroy the debasing influence of those from within and without our ranks—fakirs, charlatans and abortioners—who would drag the temple of our art into the mire of commercialism and infamy and make our standards of character, education and professional honor but a fleeting memory.

We can destroy these pernicious influences only by including in our membership every worthy physician in Kings County, thus making non membership appear to the community as clear and unmistakable as the badge of Cain.

Organization is absolutely necessary, and the County Society should be the mouth-piece and representative of every honorable practitioner.

The Membership Committee is anxious to secure every qualified practitioner as a member, and asks the co-operation of every member to the end that the membership be increased far in excess of the 1,000 mark, and that the excellent record of attendance at meetings during 1914 be exceeded.

With the active part our Society took in stimulating interest in public questions and in stopping nefarious legislation, is there any question that the Society is, more than ever, alive to its opportunities, able and willing to direct public thought, and to stimulate its members to renewed efforts in seeking the cause of disease and its cure.

"In this *War* there can be *No Neutrals,* only *Patriots* or *Traitors.*"

Will *YOU* help? Will *YOU* bring in *TWO* members?

In conclusion let me remind you to consult your green book and make a note of those whom you may be able to influence who are not members.

Work with a keenness that will make it apparent to your listener that *you are* a live wire and feel the stimulating influence of membership. That aside and in addition to mal-practice defense; State Society Journal and membership Medical Directory and other advantages of membership, it is the "sine qua non" to that Esprit de corps that exists among us.

It was regularly moved and carried that the report be received with thanks.

Meeting adjourned at 10.45 P. M.

Burton Harris,
*Secretary.*

## ABSTRACT OF THE REPORT OF JOHN G. DYER, ESQ., PROSECUTING ATTORNEY OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS UPON WORK DONE DURING THE YEAR, 1914, PRINTED BY ORDER OF THE COUNCIL.

Annual Report 1914-1915.

*To the Council of the Medical Society of the County of Kings—*

Gentlemen: I have the honor to submit herewith a resume of the work done by your Counsel from the 1st day of January, 1914, to the 1st day of January, 1915.

*People vs. Richard F. Shelton.*

The defendant in this case was a negro who had an office at 1864 Bergen Street, Brooklyn. Complaints had been received concerning him. The woman investigator called upon the defendant and complained to him that she was suffering from a headache, and not feeling well. The defendant inquired intimately concerning her physical condition and prescribed for her. The defendant was arrested and held for examination in the Court of Special Sessions. He was tried and convicted and sentenced to pay a fine of $150, or to serve thirty days in the City Prison. He served the term. At the time of of his trial the defendant claimed to be an associate pastor of a negro church in Brooklyn. The defendant in this case was connected with another negro, formerly convicted in New York County, in defrauding ignorant negroes throughout the city of large sums of money for treating them for their various ailments.

*People vs. Francesco Marino.*

Francesco Marino was an unlicensed Italian physician formerly convicted upon complaint of the Medical Society of the County of Kings. He practised medicine at 244 High Street, Brooklyn. Many complaints were received concerning him. He treated and prescribed for the investigator. He was arrested, tried and convicted of practicing medicine unlawfully. He was sentenced to pay a fine of $50 or to serve a term of thirty days in the City Prison. He paid the fine.

*People vs. August Erlenger.*

August Erlenger is a German physician with his place of business at 390 Bleecker Street, Brooklyn. Many complaints were received concerning the defendant. His card read "Dr. August Erlenger, German Physician, treatment of all sicknesses, also tuberculosis. Women's diseases a speciality." He treated and prescribed for an investigator. He was arrested and held for trial. He pleaded guilty in the Court of Special Sessions. It seems that the defendant Erlenger held a license to practice medicine in the State of New Jersey. He stated to the court that he believed that if he obtained a license in the State of New Jersey he had done all that was required to practice medicine in this county. The court suspended sentence upon the defendant, and advised him to obtain at once the necessary license to practice medicine in this State.

*People vs. Johanna Dories.*

The defendant in this case was a midwife residing at 1878 Broadway, Brooklyn. Many complaints had been received concerning her. She sold drugs purporting to be for the causing of unlawful abortion to two women investigators. She was arrested and held to await trial. She pleaded guilty in the Court of Special Sessions and was sentenced to serve two months in the City Prison. The court did not impose any alternative fine.

*People vs. Lillian M. Millard.*

The defendant in this case had an office at No. 159 Monroe Street, Brooklyn. She advertised a special cure for rheumatism, dyspepsia and nervousness by electrical treatment. Evidence was obtained aganst her by a woman investigator. She was arrested and held to await trial. She was convicted after trial. At the time of sentence she stated to the court that she had been in business in Brooklyn for about twenty years, and that she was then over sixty years of age. She did not look more than thirty-five years. The court in view of the age of the woman warned her to discontinue the practice of medicine and then suspended sentence.

*People vs. Alexandria Sedleska and People vs. Louis Weiss.*

Alexandria Sedleska was a midwife residing at 404 Linwood Street, Brooklyn. Louis Weiss was a drug clerk employed by the proprietor of the drug store at 742 Glenmore Avenue, Brooklyn. Complaints were received concerning Mrs. Sedleska. An investigator called upon Mrs. Sedleska and asked for drugs to bring on a miscarriage. Mrs. Sedleska stated that she did not have any drugs in her possession but that she would give the investigator a card to be taken to the drugstore and that the druggist would give the investigator a certain kind of pill upon the presentation of her card. The investigator took the card to the drugstore and was given the pills by defendant Weiss. A second investigator was used to substantiate the story of the first investigator, and the same state of facts was found to exist. Warrants were obtained for the arrest of the defendant Sedleska upon the charge of violating Section 1142 of the Penal Law in that she gave advice orally, as to where an article being or purporting to be for causing unlawful abortion could be obtained, and for the defendant Weiss on a charge of violating section 1142 of the Penal Law in selling an article purporting to be for the causing of unlawful abortion. Both defendants were held for trial in the Court of Special Sessions. Both defendants were convicted after trial. They were remanded to jail for one week for sentence. The court then sentenced the defendant Weiss to pay a fine of $50 or serve ten days in the City Prison, and the defendant Sedleska to pay a fine of $100 or to serve thirty days in the City Prison. Both defendants paid their fines. The conviction of the defendant Sedleska upon the charge presented is the first one to the knowledge of your counsel obtained in this State upon that charge.

*Miscellaneous Matters.*

During the past year your Counsel has been interviewed by representatives of the Police Department, Charity Organization Society, Health Department, District Attorney's Office, City Magistrates, and other public officials, as well as individuals engaged in social and benevolent work. The work of the Medical Society of the County of Kings in prosecuting violations of the Medical Law is receiving recognition and support from the public officials, societies and individuals.

*Investigations.*

More than fifty complaints concerning the unlicensed practice of medicine were investigated. Persons practicing medicine unlawfully do so with the greatest caution. Investigation of complaints has a great value in its repressive effect. Persons attempting to practice without a license are wary indeed when they know their actions are watched and they are at least careful to select the ones whom they will defraud.

The summary of investigations read to the Council shows that every kind of illegal practice has been investigated and that the practitioners are restrained by their fear of arrest and prosecution.

Respectfully submitted,

John G. Dyer,
Counsel to the Medical Society of the County of Kings.

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# INTESTINAL TUBERCULOSIS,

## WITH SPECIAL CONSIDERATION OF THE HYPERPLASTIC FORM, AND A CASE REPORT.

Hartwig Kandt, M.D.,
Brooklyn-New York.

INTESTINAL tuberculosis may occur primarily in the intestines, or it may be secondary to tuberculous disease elsewhere. The primary form is not at all infrequent with infants and young children, whose intestinal canal is predisposed by its well-known lack of resistance to bacterial infection, and in consequence of their daily exposure to the milk of tuberculous cows. In older children and adults, however, although theoretically possible, such primary infection is comparatively rare. Numerous reliable investigations have established its primary occurrence, and the case of Wyss, belonging in this class, may be cited here as an example: A little girl of 5½ years had died of diphtheria; the post-mortem examination revealed a miliary tubercle in the ileum, containing giant cells and tubercle bacilli, but no signs or traces of a tuberculous process elsewhere. Councilman, Mallory, Pierce, Heller and Kossel made similar studies on the bodies of 220 children who had died of diseases evidently other than tuberculosis. In 27 of these the mesenteric glands were found tuberculous with no other foci, pointing clearly to the intestine as the portal of entry for the tubercle bacillus. Cases, as these, are probably caused by the ingestion of the meat or milk of tuberculous animals or of their products. It is true that the parts of the animal most frequently affected are not commonly used in food, but experiments by Huhn and Steinheil have shown that tuberculosis may follow the inoculation with the virus contained in the expressed juice of the muscles of tuberculous animals. The possibility, therefore, of a primary infection of the intestine must be conceded, but, being rare, it is more of scientific than of practical interest.

Secondary involvement of the intestine, however, is of very common occurrence, being found in 50 to 90 per cent of all fatal cases of pulmonary tuberculosis that come to autopsy. The primary focus is almost invariably a tuberculous lung, the carrier of the infection the swallowed sputum. Occasionally the bacilli will reach the intestine not in the sputum, but by hematogenous or lymphogenous channels.

Whatever lowers the vitality of the intestine or causes a break in the continuity of its mucosa prepares the soil for the invasion of the tubercle bacillus and may so become a predisposing factor. The epithelial desquamation, for instance, going on in the non-specific, so-called pretuberculous enteritis, so common in consumptives, creates tiny erosions of the mucosa through which the bacilli gain an easy entrance. Any intestinal catarrh, whether due to improper food, intemperance or other causes, may have the same effect. The ulcers of typhoid, of a simple ulcerative enteritis, or ileocolitis, and the ulcers due to anti-syphilitic mercurial medication, offer splendid opportunities to passing tubercle bacilli, and may change a simple inflammatory process into tuberculous disease. To prove that the entrance of bacilli is greatly favored by such erosions, Orth fed animals with tubercles, rich in calcareous concretions, and never failed to produce the disease, while feeding with decalcified tubercles was mostly unsuccessful. On the other hand, it is by no means necessary to have such a break in the continuity of the mucosa. This has been demonstrated by Dobroklonsky and others, who fed rabbits with tubercles and produced a tuberculosis of the mesenteric glands, the mucous membrane itself remaining perfectly healthy and showing no signs of having been traversed by the bacilli. This proves conclusively that bacilli or their spores can penetrate the normal epithelium, and it is believed that the diapedesis of the lymphocytes during digestion helps to prepare and show the way for the bacilli. The truth of this assertion is substantiated by the experiments of Desonbry, Porcher and Ravenel, who fed dogs on an emulsion of fats and tubercle bacilli, and were able to demonstrate innumerable bacilli in the chyle, which was collected four hours later, that is, during active fat digestion; while few or no bacilli were found where they had been given in a fat-free medium.

Gastric catarrh is looked upon as a predisposing factor, in as much as it changes the composition of the gastric juice which is inimical to the life of the tubercle bacillus.

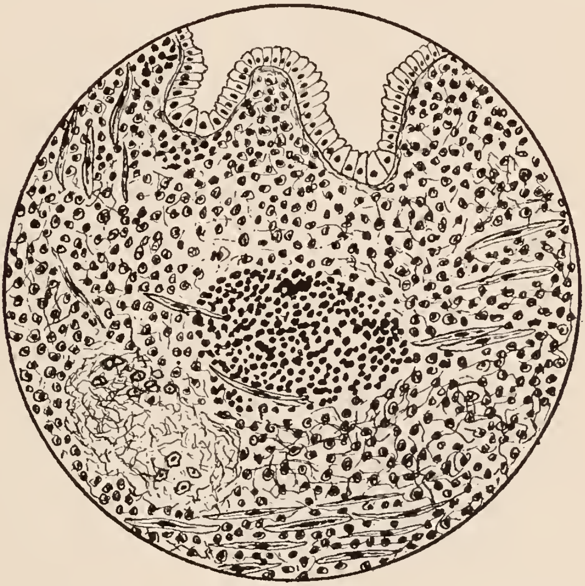
It goes without saying that a high grade of activity in the lung, loading the sputa with bacilli, increases the chances for intestinal infection, so that almost every case with much cavitation may be expected to have intestinal involvement.

The initial lesion of intestinal tuberculosis occurs almost invariably in the lower ileum and in the cecum whence it may spread in both directions, but usually down the colon, and as far as the rectum. Fenwick and Dodwell state that about 85 per cent of all cases of intestinal tuberculosis have their initial lesion at the ileocecal bend. Involvement of the small intestine above the ileum, especially primary involvement, is considered very rare, although the case to be reported later on in this paper has to be classed among these exceptions. The causes for this selection of the ileum and cecum over the rest of the alimentary canal are to be found in their anatomical and physiological makeup and correspond roughly to the causes which have been advanced to explain the frequency of other inflammatory conditions in and around the appendix vermiformis. It has been mentioned before that the acid of the gastric juice is capable of destroying the tubercle bacillus, though not its spores, and as a matter of fact, tuberculous ulcer of the stomach mucosa is so rare that only one case was found by Eisenhardt in a series of 567 cases of tuberculosis of the alimentary canal. A similar immunity is enjoyed by the duodenum, and also the jejunum is protected, because the food is hurried through it so rapidly that bacteria find it difficult to gain a foothold.

As the food approaches the cecum, however, its progress becomes greatly retarded by reason of the narrowing of the road at the ileocecal valve and its sharp, almost rectangular turn at this point. From here on the food is laboriously pushed upward by the peristalsis of the ascending colon, and the natural result is stasis in the last portion of the ileum and in the cecum, with many chances for mechanical injury to the tender mucosa and its chemical irritation from the putrefaction of a stagnating mass of feces.

Other peculiarities tending towards inflammatory conditions in this section of the gut are the great vascularity of the cecum and its abundance of lymphoid tissue, at least in the young. The fact that at the ileocecal valve the mucosa changes from the villous formation of the small intestine to that of the colon, creating the well-known tendency to inflammation and new growth at such borderlines, may have some bearing.

The exact point at which the invasion of the bacillus takes place is in Peyer's patches and in the solitary follicles. The proliferation of cells, following the invasion of the bacillus, induces swelling of the follicle, with subsequent caseation in its centre, and results in a small, gray, translucent mass the size of a millet seed, the tubercle. The distended follicle finally bursts towards the surface and a tiny crater-shaped ulcer is seen, the primitive ulcer of Rokitansky. The same process repeats itself in other solitary follicles, and in the individual folicles of a Peyer's patch; the intervening tissues soften and break down, several small ulcers merge into one another and the finished product is the typical tuberculous ulcer, elongated or irregular in outline, with raised, light red edges, a dirty, greasy floor, and swelling of the surrounding lymphoid tissue. Following the circular course of the lymphatics, they creep often transversely around the bowel, forming the so-called tuberculous girdle ulcer. To the down-



Hyperplastic Tuberculosis of the Small Intestine (Semidiagrammatic).

ward progress of the destruction the muscular coat offers some resistance, but gradually infiltration and caseation of the deeper layers takes place, until the involvement of the serous coat sets up a local tuberculous peritonitis, which covers the reddened and thickened serosa with fibrin and sometimes tubercles, so that the nature of the ulcer is apparent already from the outside. As the disease advances the regional mesenteric glands enlarge and adhesions glue the base of the ulcer to the neighboring coils of intestine or mesentery, so that perforations are unusual. The tendency to repair and healing of tuberculous ulcers is very slight, but consequently little scar tissue is formed and extensive stenosis rare.

The symptoms of an ulcerative intestinal tuberculosis are practically those of an enteritis from any other cause. A persistent, perhaps blood-tinged diarrhoea, with abdominal pain and tenderness in the right lower quadrant in a person suffering with pulmonary tuberculosis, should always suggest the possibility of an intestinal involvement. It must be remembered, however, that patients may have an extensive ulceration without diarrhoea or pain, and that in others the diarrhoea is an expression of amyloid disease of the intestine, a not infrequent concomitant of chronic tuberculosis of the lungs. The finding of tubercle bacilli in the stools is suggestive, but may be due to the swallowing of tuberculous sputa.

In children, in whom the intestine may be the primary focus without any signs of lung involvement, the diagnosis is still more difficult. Walsh, on the basis of 100 autopsies at the Phipp's Institute, has come to the conclusion that a diagnosis of tuberculous ulceration of the intestine cannot be made with any degree of certainty, and warns against the making of such diagnosis for fear of discouraging hearty efforts towards a cure.

It remains for me to describe a special and rather unusual form of intestinal tuberculosis, which has come into prominence only in the last two decades, and the knowledge of which has advanced hand in hand with the development of the surgery of the right lower abdominal quadrant. I mean the hyperplastic form, which is usually localized in the cecum.

Durante, in 1890, was the first to draw attention to this condition as a pathological entity, but was soon followed by Billroth, Hartmann, Pilliet, and numerous other investigators. Conrath's monograph, based on 85 cases, covers the subject most thoroughly, especially from a surgical viewpoint.

In this variety of intestinal tuberculosis the tubercle bacillus, instead of causing necrosis and caseation, produces an enormous hyperplasia, resulting in tumor-like growths, usually entirely limited to the cecum. So well defined are these masses and so similar to malignant growth, that they are often taken for carcinoma or sarcoma, and even a naked-eye examination after excision may not help to clear up this error. This, perhaps, explains a number of the cures which have followed the extirpation of a presumptive intestinal cancer. Painstaking microscopical examination is often necessary for the recognition of the true pathological condition, as on superficial examination the enormous small, round cell infiltration is very suggestive of sarcoma. This error was made by a very capable pathologist when giving his first opinion on the specimen of the case to be reported later on.

The cecum, I may add, is not the only site of hyperplastic tuberculosis; similar tumors have been found in the larynx, where they may be mistaken for carcinoma; also in the peritoneum, pleura, joints, nose, muscles, heart and lymphatics. Some of the cases, which are called Hodgkin's disease, may, on closer examination, turn out to be cases of tuberculous adenitis.

The earlier French writers named this condition "tuberculose intestinale à forme hypertrophique," which is a misnomer from a pathological viewpoint, and the name "hyperplastic tuberculosis," first given to it by Coquet, seems more appropriate because it is much more an inflammatory proliferation of the tissues than a true hypertrophy. In the majority of cases this hyperplasia forms a well circumscribed tumor-mass with more or less stenosis of the ileocecal valve; in others we see a rigid section of intestine with a much thickened wall merging gradually into the normal gut above and below, or there may be a number of tumors interrupted by a portion of intestine which is more or less normal. On opening the diseased intestine we find stenosis in varying degrees. The mucosa may appear perfectly normal or may be necrotic and studded with tuberculous ulcers. In a few instances, as in Lartigan's case, numerous papillomatous excrescences are seen, rather club-shaped and pedunculated, freely movable but rigid in consistence, either singly or in small bunches, their average size being about 5 mm., but some of them as large as hazelnuts. The feel of the tumor is rather hard but elastic, reminding me of a large piece of rubber, something like the feel of a large gumma. On section it looks a dirty gray. Microscopical examination shows tubercles, proliferation of connective tissue and an enormous small round cell infiltration in the various layers of the intestinal wall, but chiefly in the subserosa and in the submucosa, which may show ten times its normal thickness. This increase of connective tissue and small round cells is the predominating feature and explains the great thickening of the gut in this condition. Rarely a few tubercle bacilli are found.

The etiology given for the ordinary form of intestinal tuberculosis applies also to this variety. It seems to affect people in the middle period of life. Why the bacillus here tends to produce a hyperplasia with thickening of the intestinal wall rather than a tuberculous ulcer with thinning is still a much contested point. Some investigators hold that it is produced by attenuated bacilli of low virulence, generating small amounts of toxins, which irritate the tissues just enough to cause inflammatory reaction, but not enough to cause necrosis and caseation. Hartmann, Pilliet, Benoit and others believe it to be the simple inflammatory change of a secondary infection. The small number of tubercle bacilli found in the tissues seems to speak for this theory. One fact seems to stand out very clearly in almost every reported case of tuberculous hyperplasia of the intestine, and that is the comparative insignificance of the co-existing pulmonary infection, or even its total absence, in contradistinction to the usually very extensive and active lung invasion found with intestinal tuberculosis of the ordinary ulcer type. We have as a result a less frequent soiling of the intestinal mucosa with a less virulent sputum, the possibility of autotuberculization, a much better general resistance, and may consequently expect a modified behavior of the bacillus in the tissues and a rather chronic course of the disease. Keeping this in mind, it will be readily understood that the symptoms must be more or less indefinite, and the diagnosis exceedingly difficult. For years the patient may complain of nothing more than vague gastric and intestinal disturbances, which are put down to indigestion, perhaps a period of looseness of the bowels or of constipation, a slight and gradual loss of weight and a moderate anemia, until some day he discovers a hard lump in his abdomen, usually in the right lower quadrant. Where the pathological process produces early a marked narrowing of the intestinal lumen, we may get sudden attacks of violent right-sided intestinal colic, with perhaps the appearance at the ileocecal angle of a bulging, tympanitic mass, due to the ballooning of the ileum, and disappearing when the temporary obstruction is relieved. The latter phenomenon was a very prominent feature in a case of ileocecal tuberculosis which I saw five years ago, and which was observed repeatedly a number of months before a mass could be palpated.

Whatever may be the particular train of symptoms in different cases, they all exhibit one common feature, and that is the great chronicity of the disease. Years elapse as a rule before the tumor is discovered, and even then it is possible that, without interference, such cases may last for a considerable period. Usually, however, the surgeon will get a hold of the patient at this stage and will either cure him or hasten his end. Without surgery the final outcome is bound to be fatal; the gradually increasing stenosis may lead to complete obstruction; perforation may take place with septic peritonitis, the tumor may break down and form an abscess, or the patient may be carried off by a generalized tuberculosis.

As soon as the ileocecal tumor has become palpable, the question arises as to its nature, a question not easily answered. Perityphlitic exudate, actinomycosis, invagination tumors, carcinoma and sarcoma have to be thought of, besides hyperplastic tuberculosis. Elaborate schemes of differential diagnosis have been worked out by Obrastzoff and Conrath, but, after all, they are very unsatisfactory and the majority of cases are recognized only on the operating table. A few points which are helpful in differentiating it from carcinoma are the history of diarrhoea, the presence of tubercle bacilli in the stools, the known existence of other tuberculous foci, and the chronicity of the intestinal process.

The difficulty of diagnosis is well illustrated by the recital of the following case which recently came under my observation, and the true nature of which was only recognized after the pathological report had been received, and this in spite of the fact that, five years previous, my interest in this form of disease had been aroused by another case of hyperplastic intestinal tuberculosis which I diagnosed and in which a typical ileocecal tumor was removed by my surgical friend, Dr. Henry Graham. The recent case, it is true, was very unusual, in so far as the tumor was well to the left of the umbilicus, the pathological process being confined to the jejunum, a very unusual site and the only case that I could find in the literature except that reported by Pantaloni.

## CASE REPORT.

J. C., male, 48, a towerman with the B. R. T., was first seen by me on July 15, 1914.

*Family History.*—Negative.

*Previous Personal History.*—Usual diseases of childhood without sequelæ. Syphilis 30 years ago, mercurial treatment, no manifestations in after life. Frequent catarrhs of the nose and throat. Alcoholic habits up to ten years ago, since then abstainer. Married 25 years, wife in good health, one son of 23, no miscarriages. Left-sided pleurisy two years ago with rapid recovery. Altogether, patient has been a very healthy and robust man.

*Present Illness.*—About eight weeks ago he began to have indefinite, dull, gnawing pains in left upper abdomen, radiating into the precordium. Pains were at first intermittent, but have become constant of late. Appetite good until three weeks ago, when it began to fail and is nil at present. Bowels fairly regular, constipated of late. Has lost about 12 pounds in the last three weeks, but noticed abdomen grow larger for some months, so that two months ago he had to put a V-shaped piece in the back of his trousers. Feels well and strong except for abdominal pains, goes to work every day, thinks he could run to Coney Island and back again. Has consulted three physicians for anorexia and pain, treated for indigestion without relief. No cough, expectoration or night sweats, no feelings of feverishness.

*Physical Examination.*—Tall, muscular man of spare frame, but not emaciated. Skin has slightly cachectic tint, tongue clean, teeth good, cervical glands palpable. Thorax good contour, no abnormal depressions or pulsations. Heart normal in size, sounds of good muscular tone, rhythmic, 80 per minute. A soft blowing, mitral, systolic murmur at apex, transmitted into axila.

*Lungs.*—Normal, except over left lower lobe posteriorly from the eighth space down. Over this area percussion elicits slight dullness, the breath sounds are distant but somewhat harsh with high-pitched expiratory sound, tactile fremitus and vocal resonance are increased, but no râles.

*Abdomen.*—Soft and flat, except for a distinct bulging of the left lower half. Liver and spleen not palpable. About two inches to the left of umbilicus and slightly below it, a hard, rounded mass about three inches in diameter can be felt distinctly; it is intraperitoneal, freely movable, slightly tender, and percusses flat. No other masses were found. Inguinal glands palpable. Extremities normal, no clubbing of fingers or edema.

On the ground of these findings, a diagnosis of neoplasm, probably malignant, was made and early operation was urged. After his attention had been called to it, the man himself could feel the tumor distinctly. Patient entered the surgical service of Dr. C. H. Goodrich at the Methodist Episcopal Hospital two days later. He was observed for about one week, during which his general and abdominal condition remained the same. There was no elevation of temperature, the pulse ranged between 60 and 100, the urine was normal. A blood analysis showed 4,500,000 reds with 75 per cent hemoglobin and 5,400 leucocytes. A Wassermann test was negative; sputum was not obtainable.

On July 23rd patient was operated upon. Through the left rectus incision a small, irregular tumor on the mesenteric side of the small intestine presented. A few inches further up another tumor was found, about three inches in diameter, with a piece of neighboring gut glued up against it. Ten inches of small intestine, incorporating these two masses, were excised, and an end-to-end anastomosis done. Thorough exploration of the peritoneal cavity revealed a third mass, still larger and quite firm and nodular, between folds of mesentery in a more posterior plane, about three inches from the removed section of gut, overlying and attached to the abdominal aorta and extending up to the pancreas. It did not seem wise to attempt removal of this mass. The cecum and colon seemed to be normal.

Patient made a stormy recovery, with much vomiting and rapid loss of strength and weight, although the wound healed by first intention. On the third day after operation the patient ran up a temperature of 103 degrees, with cough, bronchovescicular breathing and crepitant and subcrepitant râles over the lower left lobe posteriorly. This was probably the expression of an acute lighting up of an existing tuberculous lesion, perhaps excited by the ether anesthesia. It subsided in a few days, but cough and expectoration continued and the sputum was examined daily. The fifth sputum showed tubercle bacilli. The bowels moved voluntarily on the third day after operation, but later had to be kept open by enemata. Abdominal pain became more and more intense, and in the third week a mass became palpable in the epigastrium which seemed to grow almost visibly. Patient left the hospital on August 13th, but died one month later with all the manifestations of a generalized tuberculosis. Autopsy unfortunately could not be obtained.

*Pathological Report* (by Dr. E. B. Smith).—Gross description. Specimen is a portion of the small intestine, ten inches in length. At one end in the wall of the intestine, at the point of attachment of the mesentery, is a small mass two inches in diameter. This has the same characteristics as the larger tumor about to be described, which is a few inches further up; the intervening gut is apparently uninvolved. The larger mass is about four inches in length and three inches across. It consists of a marked thickening of the intestinal wall, involving the entire circumference of the gut. The edges are raised and rather sharply defined. The intestinal wall becomes thicker until, at the center of the growth, it is fully one inch and a half thick. The lumen of the gut is narrowed but not occluded. The mucosa is dark and discolored, and apparently necrotic in spots. No outgrowths or ulcers could be demonstrated. The peritoneal surface shows a few adhesions. On section the growth is moderately firm and of a grayish color. The mucosa is enormously thickened from one-quarter to one and one-quarter inches in depth and appears to be composed largely of lymphoid tissue. The muscular coat is slightly thickened and the peritoneal surface unchanged except for the few adhesions mentioned. No gross tubercles were observed.

*Microscopic.*—Sections were made to show as much of the mucosa as possible. Owing to the great thickness of the tumor, sections showing all of the coats of the intestine could not be made. The mucosa is enormously thickened. Most of the surface epithelium has been shed in the necrotic process. The intestinal glands are widely separated from each other, giving an appearance of being diminished in number. The cylindrical epithelium in the depth of these glands is intact and normal in appearance, and the glands themselves appear normal. The stroma supporting the glands is densely packed with small, round lymphoid cells. There are a few fibroblasts and a small amount of connective tissue, but the striking feature is the marked infiltration with round cells. The density of this infiltration varies slightly in different areas. There is one small, circular area of necrosis with a few epitheloid cells scattered through the necrotic material, which is the only evidence of the usual results of infection by the tubercle bacillus. No giant cells were seen. The muscularis mucosae is thickened and its muscular fibres gathered into small bands and widely separated by the same round cell infiltration. Unfortunately, the sections do not include the submucosa and the muscular and peritoneal coats, but the most striking and characteristic features of the process are found in the mucosa and have been described above.

An analysis of the gross and microscopic features of this tumor shows it to agree in almost every detail with descriptions of hyperplastic tuberculosis, as given by Lartigan and others. The greatly thickened mucosa, densely infiltrated with small round cells of a lymphoid type, make the diagnosis certain without the area of necrosis and epitheloid cells. Hyperplastic tuberculosis is usually situated at the ileocecal junction or in the large intestine, but the fact that it is rare, though not impossible in the small intestine, only adds to the interest of the case.

The interest of this case seems to me to lie in these three points: (1) As an illustration of the chronicity of this type of intestinal tuberculosis, because it may be presumed that the condition had existed for a long time before discovery of the tumor, with the patient in comparatively good health. (2) The probability of a primary infection of the intestine in view of the fact that the co-existing pulmonary condition was inactive and insignificant. (3) The restriction of the process to the upper portion of the small intestine. I say upper portion because the coils of the ileum lie usually more to the right side, in the right iliac fossa and true pelvis, while the jejunum is to be found in the umbilical region and left iliac fossa, which was the site of the tumor in question.

That it was a growth of the small intestine cannot be doubted from the evidence, and even if it had been a part of the upper ileum and not the jejunum, it would still be a rarity, as Gant of New York states as late as June, 1913, that hyperplastic tuberculosis of the small intestine does not exist.

The treatment of these two forms of the disease, although due to the same cause, differs widely, the one being purely medical, the other surgical. What has been hinted at in the etiology offers suggestions as to prophylaxis, and may be condensed into these few words: Lead a wholesome and sanitary existence, protect the children against tuberculous milk, keep the bowels free so as to prevent stasis, and never swallow the sputum.

The treatment of the ulcerative form, as has been said before, is medical. It consists in the measures used to combat the causative lung condition and in the relief of the often so troublesome diarrhoea and colic by the usual medicinal agents. Other symptoms have to be treated as they arise. For the treatment of the ulcers antiseptic drugs by mouth are only slightly useful, as they cannot be taken in large enough doses to be effectual. Creosote by its incidental action on the lungs I consider the most valuable representative of this class of drugs. Tuberculin has not shown results so far. The diet should be carefully selected to avoid irritation of the existing ulcers, but since forced feeding is indispensable to improve the general resistance, we find ourselves divided between two desires. Russian oil may be useful in soothing, coating and lubricating the intestinal mucosa. Warm bowel irrigations are certainly valuable and serve the double purpose of cleaning out the bowels, washing away foul discharges and toxins, and of allowing us to incorporate in the water medicinal agents for the control of various symptoms, as, for instance, silver nitrate (gr. xv to xxx to one quart) for diarrhoea and bleeding. These irrigations are to be given in the knee chest position, or still better, by means of an enterostomy, colostomy, appendicostomy or cecostomy opening. At the best, all these efforts will be mostly palliative in character, the majority of cases going on to a fatal termination.

In the hyperplastic type of this disease the indications for treatment are much clearer, because here we have often a well localized and slow growing tumor, gradually leading to stenosis and with little or no pulmonary involvement. Under such conditions the indications for surgery are very strong. The palliative method is that of excluding the diseased section of intestine on the same principle as the orthopedist puts a tuberculous joint at rest. The radical method, which should be used wherever feasible, is by resection of the diseased gut. The results of surgery in this condition have been most encouraging, the incisions close almost invariably by first intention and a number of permanent cures are on record.

## REFERENCES.

Conrath—*Beiträge zur klinischen Chirurgie,* Band XXI, Sept. 1st.
Lartigan—*Journal of Experimental Medicine,* Vol. VL.
Coquet—*Thesè de Paris,* 1894.
Hartmann & Pilliet—*Bulletin de la Soc, anat. de Paris,* 1891.
Billroth—*Wiener Med. Presse,* 1891, p. 193.
Guinard—*Bull. et mem. de la Societe de chir.,* Paris, 1889, XXV, p. 327.
Dobroklonsky—*Arch. de med. exper. et d'anat. path.,* 1890, II, p. 253.
Huhn—*Virchow's Jahrberichte,* Berlin, 1894, p. 652.
Tschistowitsch—*Annales de l'institute Pasteur,* Vol. V, p. 222.
Fischer—*Archiv für experiment. Pathol,,* XX, 1886.
Wyss—*Korrespondenzblatt für Schweizer Aerzte,* 1893, No. 22.
Rokitansky—*Lehrb. der path. Anat., Wein,* 1861, Band III.
Benoit—*Tubercul. local chronique de la region ileo-cœcal,* Paris, 1893.
Osler—*Modern Medicine,* Vol. V.
Heller—*Deutsche Med. Wochenschrift,* 1902, No. 39.
Klebs—*Tuberculosis,* 1909.
Walsh—*N. Y. Med. Journal,* Vol. XC, No. III.
Walsh—*The Post-graduate,* June, 1913.
Tuffier—*Presse Medicale,* Feb., 1900.
Nothnagel—*Diseases of Intestines and Peritoneum,* 1907.
Albutt & Rolleston—*Systems of Med.,* Vol. III.
Hartmann—*Trans. Med. Soc.,* London, 1907, XXX.

# FATIGUE AND EFFICIENCY.*

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A MAN in marrying takes a chance on a whole family as well as a wife, and on founding a hospital rather than a home. So he who would study fatigue and efficiency well may feel impelled to deal with the complexes of work and ability at large. The newer studies of efficiency, as well as the older ones of fatigue, hint this wealth of range. Motives vie with methods, methods with results,

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results with values, in great variety. The contributions have been chiefly from the fields of physiology and medicine, psychology and pathology, technology and sociology, and common experience. The investigators have sought whether the seat of fatigue is the original germ plasm, brain centers or peripheral ganglia, nerve fibres or terminal synapses, muscular or glandular tissues; whether the cause is decomposition-products of clogging or poisonous nature, tetanic inhibitions or other degeneracy; what constitute reliable bodily or mental tests; how to measure the associated phenomena of skin, heart, lungs, brain, and other organs; and how far the effects mean harm or benefit. Nothing is settled; but this work was inevitable and is now a rich resource like that of the business man in a new pursuit, who gets ahead only as he profits by the stray efforts charged to the loss and gain account of "experience."

As a class these researches, affected by the tendency to specialization, over-simplify the problem, peculiarly as to the mental factors. When an enthusiastic sightseer arrives at a World's Fair, gaily fresh from his hotel, and a couple of hours later surprises himself seeking some comforting niche in which to rest, his feelings likely are not due merely to the several miles he may have walked meanwhile. Transmutings and measurements in physics is a definite thing, but efforts to reduce mental and muscular powers to purely mechanical terms have yielded confusion and error. Equally baffling is the transmutation of muscular into mental units and vice versa. In such cases, results may be crude at best; but methods, merely simple in applying, even if good enough for practical purposes, as the saying is, are not good enough for scientific purposes, the glory of which is to see both finely and fully. In this paper I shall take what may be styled the "professional license" to specialize on the mental side, expecting you to exercise the reciprocal privilege of making what allowance is necessary for this bias.

## Resources and Habit.

One important problem confronting us in these connections is, How far can customary output, however reliable its quantitative and qualitative appraisement, be taken as a complete index to the full individual capability? Individuals can and do increase their product greatly in almost any line, under appropriate influences. Psychology tries to illuminate the objective record of work done or possible, by testing and construing the subjective events in life and mind before, with, and after the activity in question. But for right orientation in such a problem and for most serviceable solution of it only cooperative studies can avail.

A start on it may be made by examining what have been called the Levels of the Learning Curve. If all the actions of a person in a new or complex task were catalogued in order of occurrence the record would approach a serial distribution, without marked steps. But it is customary to separate such a totality into classes, and I shall use this convenience here to treat four or five such classes.

The first is that of Initial Inertia. Most adults, particularly men, start the day or a manual task or even a mental one affected by a physical slumbering of ability and a corresponding mental feeling of apathy, often. As seen just after sleeps and protracted naps and just after vacations and protracted rests—as Blue Monday—we all are familiar with the fact. Just as the organism develops habits in the ways in which it is exercised, so by the same law it gets punkier with continued disuse.

Then comes a warming up, for out of this inert state the worker is to be aroused. Usually this is done by repetition of the actions appropriate to the given task. Physiologically this summation of stimuli engenders a higher degree of permeability in the neural tracts and of contractility in the muscular tissues, which together insure greater efficiency in the external activity. If the activity be a customary one the individual level soon will be reached; if it be a rather new one, definite practice effects appear. Similarly when one has been out of a certain calling a long while, then desires to come back into it with all his pristine vigor, it may be hard to do so. As seen in prize-fighting or baseball, one who retires from and then returns to the ring or diamond, even after severe training, usually fails to "come back."

The third is the Habitual Level. If the activity in question, either old or new, be intensively repeated, nervousness or exhaustion appear; but if only frequently repeated, an habitual condition is reached. The individual's customary doing—what are its roots or factors? Physical condition and capacity, individual temperament and disposition, routine interest and sensations of fatigue, natural fluctuations of attention and control—these are some of the determinants. Now, of fatigue one may inquire, first as to permanent susceptibility or general fatigability as distinguished from, second, any special case of fatiguing experience; and then may differentiate fatigue appearing as mere feelings of lassitude from real degeneration of vital capacity. While one's power of endurance is apt to be limited by general susceptibility and real capacity, his daily product depends more on the seemingly enfeebling feelings of fatigue. This could be illustrated variously. The habitual level is not the deepest level of accomplishment. Our usual ability is much below our actual capability.

The fourth level is that of the Organic Limit. Genuine fatigue appears when the person's constitutional capacity is reached. If this is exceeded, nervousness occurs, and finally a state of exhaustion which is more sudden or gradual as the cause is respectively more mental or physical. The immediate occasion often is a strict focalizing of attention on a single sort of activity. Due to division of labor and the consequent lack of variety in many workers' common duties, the social dangers from this source are now markedly greater than formerly.

## Resources and Incentives.

I have been referring in a general way to the matter of personal resources, but now shall deal with it more in detail.

Normal fatigue is itself a natural protection to the system—by it giving warning when an overdraft is being made, by its unpleasant associations discouraging the continuance of the activity, and by its reactionary consequences tending to make the organism more resistant to future fatigue. But what we usually know as fatigue is an acquired (in) disposition which limits more than protects the person and which is to be corrected rather than confirmed.

Specialists have surveyed eugenics, hygienics, dietetics, stimulants, sedatives, sleep, rest, change, and other fields for temporary or permanent restoratives from fatigue; but each of these would require a paper by itself and must be omitted here. Common observation yields its quota of facts on the possibility of eliciting at times, from persons, ability beyond the dead level or dead line of habit. Men do exceptionally heroic feats when greatly excited; mothers develop unwonted strength when their babes suddenly are imperilled; children are influenced in many ways and to extreme degrees by mere suggestion; under religious inspiration, immature or ignorant persons may discourse "with the tongues of men and of angels"; so-called faith and mind cures are legion in form and number; deepest depressions can be dissipated by a happy joke or a lucky inheritance; to the lover all things look easy and to be courted; for the poet, material stimulants eke out "the divine fire"; in war, the footsore and demoralized soldier responds with new alacrity and vim to the martial strains; by competition, the business man is kept superhustling; in all walks of life people are enspirited by sudden, emotional, or otherwise impressive shifts in the scenes.

Professor James well said, in an illuminating article on "The Energies of Men"—"Most of us feel as if we lived habitually with a sort of cloud weighing on us, below our highest notch of clearness of discernment, sureness of reasoning, or firmness in deciding. An intellectualist thus tied down by literality and decorum makes the same impression as an able-bodied man habituating himself to do all his work with one finger." In certain pathological cases this feeling of personal limitation reaches an extreme and chronic degree, the acuteness of which is suggested in dreaming when a person is chagrined or terrorized to find that while his mind is gaining a much-desired refuge with lightning despatch, his feet are possessed with an impotent halt. We each have "efficiency equilibria," in quantity and quality of work—a physical, an intellectual, and a spiritual one—and only exceptional individuals or exceptional occasions transcend them. Considering Mr. Roosevelt's early physical deficiency, he now is such an exceptional individual; he has reached a permanent state of "second wind"—some might venture to say "third."

Professor James refers to three classes of incitements which constitute what I mean by exceptional occasions for everyone. These are, emotional excitements—as love, anger, despair, and responsibility; stirring ideas—as truth, liberty, honor, fraternity, equality, and humanity, as used by demagogues in popular harangues; and volitional efforts of continuous or strenuous character.

Illustrating further these forms of incendiary phenomena, it may be said of emotion generally that it "not only reinforces and gives ultimate directness and quickness to the plan of behavior adopted (under its inhibitory influences), but it also sets energy free and makes it available for consumption in action (by its exhibitory influences). Old accounts say that emotion animates and invigorates with the heat and flush of swiftly flowing blood; that anger sweetens the blood, reveals a sense of new and greater powers and a faith and zeal that carry one to successful issues. Experimental researches support this popular idea (Benedict, Vincent, Sherrington, Schaefer, Cannon, Pawlow). Big emotions, as fear, anger, and love appear to stimulate specially certain bodily organs, as the thyroid and adrenal glands, which in turn tend to accelerate or suppress other physiological functions, according as they are useful or useless in the given case. For the organism is delicately adaptable to situations which affect it. The emotions are instrumental in facilitating adaptation, in setting free extra energy and in moving the whole organism (and personality) to the efficient achievement of the work to be done. With the development of the person, emotions tend to lose their bigness and intensity and, in combination with other factors, to be sublimated into attitudes and sentiments of dependable character and utility in behavior. Emotional as well as other aspects of experience are susceptible of organization into (personal) controls. Such are modesty, sympathy, love, loyalty, patriotism, and other familiar sentiments." (W. P. Smith, Phil. P. S. and M., Vol. 12, No. 2, 1915.) With this side of emotion, education should be specially concerned, though as yet very little definitely and systematically has been tried.

As to unusually powerful incitement through ideas, Le Bon in his books on the Psychology of the Crowd and of Socialism has shown, with numerous illustrations, the rôle of catch-phrases and slogans in gripping attention and appealing to the deeper or more primitive springs of energetic action. We have in language as in art, those expressions which impress us more than moderately, now by their brevity, as aphorisms; by clarity, as axioms; by sublimity, as ideals; by beauty, as euphemisms; by picturesqueness, as colloquialisms; and, by grotesquesness, as slang. Also cooings, interjections, shrieks, and all forms of inarticulate utterances are peculiarly moving; while rhythms, pauses, and silences often are even more impressive. Words like actions, and actions like words, take hold on the heart and thus urgently energize us.

Turning attention to volitional incitements, illustration is found both in the ordeals of the ancient Stoics, in the penances of mediæval and oriental extremists, and in the present "Yoga" system of religious training in Hindostan, practised by the Hindoo aspirant to perfection, while the opposite atrophying effect is seen in the practices of Eastern fakirs who fanatically leave some bodily part in a fixed position till paralyzed. The Yoga system begins with fasting and prayer, proceeds to daily exercise in extreme bodily movements, to breathing in different rhythms and postures, to concentration of thought on different parts of the body, to intellectual training in hard logical problems, and to increasingly heavy tasks gradually assumed. In from four to six months the result is that body and mind and spirit are reduced to absolute control, with marked increase of abilities. Thus the sick, irritable, or weak-willed come to feeling a calm certainty of success in every undertaking, and work strenuously with perfect health and great happiness and without tire, though sleeping and though eating but little. Such is the report of reliable Americans who have fulfilled the requirements and experienced the results.

So it would seem that almost every person "energizes below his maximum and behaves below his optimum habitually," living a contracted life every way. All know the occasional experiences of "high spirits, elastic temper, working easily and energetically, and deciding firmly"; but the psychological "how" of rendering these states more regular and constant in a given type of individual or institution is still unclear. All of them in some sense go back to faith as the basis for all new out-reaches of personality—to faith, as a sort of psychophysical dynamo for the freeing of energy and facilitating of action.

## FACTORY EXPERIENCE.

Factory experience also recognizes that workers can be induced to transcend their routine effort and product, for it applies various speed-inciting methods, such as piece-work, bonus, premium, and profit-sharing. These all depend for their success, compared to the gang system and the uniform rate of pay adopted in ordinary time-work, upon the encouragement offered to individual effort and energy. The degree of this success, productively, often is striking.

Illuminating reports on this are furnished by the volumes of Mr. Fred W. Taylor on Shop Management and of Mr. Harrington Emerson on Efficiency Systems. Taylor's aim was the accurate study of how long it takes to do work, or Scientific Time-Study as the foundation of the best management. Among the conclusions he reaches are these: "That the first-class man can do in most cases from two to four times as much as is done on the average is known to but few, and is fully realized only by those who have made a thorough and scientific study of the possibilities of men. Each workman should be given so far as possible the highest grade of work for which his physique and abilities fit him. First-class men are not only willing but glad to work at their maximum speed, provided they are paid from 30 to 100 per cent. more than the average of their trade. If over-paid, many will work irregularly, and tend to become more or less shiftless, extravagant, and dissipated. Under the conditions suggested they live rather better, begin to save money, become more sober, and work more steadily—and the writer has seen many first-class men developed who otherwise would have remained second or third class all their lives. These conditions serve the best interests of the employer also—and all this means high wages and low labor-cost," which are the symptoms of the most efficient management.

Now these bettered results were secured by means other than the bare offer of increased pay, and the additions are significant psychologically. Quoting again: "The principle of measuring the performance of each worker against a standard at frequent intervals (every hour), of keeping him informed of his progress (whether sustaining the pace), and of sending an assistant to help those who were falling down, was carried out throughout the works and proved to be most useful." The validity of this principle easily can be demonstrated in the laboratory if, on a device for registering graphically the results of a working group of muscles, a line in full view of the person is drawn at about the height shown for his maximum contraction, and he is told to reach that line as long as possible and then retold when he shows signs of flagging, his efforts are easier and his endurance greater than without these incentives. Any attention paid to an individual or any rivalry of his own record is decidedly stimulating.

"There is no question that the (natural) tendency of the average man (in all walks of life) is toward working at a slow, easy gait, and it is only after a good deal of thought and observation on his part, or as a resultant of example, conscience, or external pressure that he takes a more rapid pace. This common tendency to take it easy is greatly increased by bringing a number of men together on similar work and at a uniform rate of pay by day. Under this plan the better men gradually but surely slow down their gait to that of the poorest and least efficient. Careful time-study of men working under these conditions discloses facts ludicrous as well as pitiable; for in order not to do more than his lazy neighbor, a man will actually tire himself in his efforts to go slow." Possibly here is a picture of our International Weary Willies and some of our more modern De Ginks.

The industrial incentives mainly were financial, and succeeded; but it is possible to extend and supplement them.

At the St. Louis World's Fair, one of the attractive features was an exhibit by the National Cash Register Company and a lecture dealing with the factory and its community-innovations at Dayton. What it did there as a pioneer is now common property—in knowledge rather than in practice. "Hard work and a thoughtful consideration of others" are the structural principles of the success built up there. The latter of these early was borne in on President Patterson when as a clerk he was reproved by his employer for offering a suggestion. Like Lincoln, he decided then and there to hit hard such a custom if he ever had the chance. This he did.

For exorcising some of the gaunt monotony from laborers' lives the good to be derived from injecting change into them, from arousing a sense of freedom, and from instilling a genuine hopefulness in them, may be read out of the words which follow from Prof. Marshall's Principles of Economics: "All history is full of the record of inefficiency caused in varying degrees by slavery, serfdom, and other forms of civil and political (and industrial) oppression and repression. Freedom and hopefulness increase not only man's willingness but also his power for work. Without hope there is no enterprise. Changes of work, of scene, and of personal associations bring new thoughts, call attention to the imperfections of old methods, stimulate a divine discontent, and in every way develop creative energy. Thus a shifting of places enables the more powerful and original minds to find full scope for their energies and to rise to important positions; whereas those who stay at home are often over-much kept in their places. In all ages, colonies have been apt to outstrip their mother countries in vigor and energy. This has been due partly to the abundance of land and the cheapness of necessities at their command; partly to that natural selection of the strongest characters for a life of adventure; and partly to physiological causes connected with the mixture of races; but perhaps the most important cause of all is to be found in the hope, the freedom, and the changefulness of their lives." Change is the most central fact in the whole of animate nature, necessary to life, its working and its progress.

In some establishments it would be profitable and humanitarian to vivify the morning start or a lengthened lunch period with a diversion, using talents and materials both local and hired. The hypnotic spells and unconscious but harmful tendencies of some types of machinery and some lines of labor might be minimized. Many wearying and fretting noises might be dispossessed of their hurtful nature by interblending with agreeable mechanical intonations. It might be practicable in some occupations by proper devices to arrange for relieving sight by touch, or by hearing, or vice versa, even if only temporarily. Many operations might be managed so that the successive actions of the workers should form an alternating or more variously shifting series, as found by experiment to be adapted for furnishing relief or stimulation. Finally, good ends would be served by a carefully directed and developed use of personal responsibility and encouragement of individual initiative and invention. A great value from installing such ideas anywhere would be the instructive object lesson furnished by it to hostile labor masses and captains elsewhere. Novel or reformatory ideas and acts run, like vice, a career, hated when first seen, embraced when finally familiarized.

## FATIGUE TESTS.

When the question of proper tests is approached, the way becomes rugged and sinuous. As already intimated, one then wants to know what fatigue or feature of it is to be tested; whether the mere existence of a general susceptibility or a present particular state; whether the immediate or the accruing or the ultimate effects; whether the variations due to age, sex, food, disease, kind of work or other special conditions; whether the economic or the personal issues, and if the latter, their physical, mental, and moral phases; as to the interrelations of fatigue, feelings of fatigue, effort, pain, and associated phenomena; and finally the sub-forms of each of all these.

Since 1879, when Sikorsky introduced objective study of fatigue in school children, till the present, the most impressive fact in this field has been the variety of tests suggested; and the central problem of today is this very one of satisfactory methods of measurement. It would be tedious and futile so much as to name all of the methods used, but several remarks may be made in this connection. Neglecting the important question as to how far mental fatigue is physical, and *vice versa,* and to be measured accordingly, it may be said that muscular fatigue usually has been estimated by loss of strength, rate, or accuracy of movement in a finger, hand, arm, leg, the back, or some combination of these. Mental fatigue has been tested by loss of tactual, visual, or auditory accuity; by shifts in power of attention; by changes in types of imagery; by prolongations or inaccuracies of association or of memory; by mathematical errors of calculation; and by other apperceptive deficiencies in complexed functioning.

In all this mainly education and science have been directly in view, not industrial considerations. Bearing directly on the last, the efficiency engineers in the United States, studying and using unit-times in their work, take no direct account of fatigue. More has been done abroad than here.

In Europe, too, the relation of fatigue to industrial accidents was earlier studied than by us and its causal rôle recognized. A certain Mediterranean port had more labor accidents than any other port. The insurance companies united, claimed that the workers voluntarily injured themselves, and had the State laws changed accordingly. But careful investigation subsequently showed the following facts about these laborers: 1. Their external conditions were more trying than elsewhere. 2. Their day of eight hours was an hour shorter than at other ports, but in this briefer time they handled a much larger tonnage of merchandise, with additional fatigue. This fatigue was assigned as one of the chief sources of the higher rate of injuries, found to be actually occurring at this port without any criminal intent to defraud. Similar considerations lead one to the conclusion that fatigue should be classed with accident, disease, and other debilitating agencies. Before this truth has weight with those high up in industrial officialdom, the strong arm of the law is apt to be invoked.

Self-protective measures should appeal to these high-up proprietors; yet not more so than the direct increase of profits for themselves and of better feelings between themselves and the employees which would obtain if the statements in previous sections of this paper are true and practicable. But in the noise and din of rushing industry, it is hard for the voice of such virgin proposals to reach the intended ears; and in the smoke and dust of a mighty production it is not surprising that the physiological, mental, and spiritual stars should be and remain beclouded, by which we best and most justly might direct this great social machine. This would be true even if the social student had more to offer in the way of luminous constructive policies. To such a student the interest which in this country so widely is arising in connection with accident compensation, unemployment, and similar matters seems a hopeful preparation for the advent not only of more preventive measures as to incidental disasters, but also, and as valuably, of more incentive measures with respect to work at large. The latter would aim at so up-building the internal tonus of the work-system as to add to conservation of resources by prevention the complementary virtue of growth by stimulation, thus helping to induce pungency in workers by invoking more soul-stirring forms of expression. Hereditary tools lose temper without frequent environmental reshaping and resharpening; so, too, does acquired personal equipment. Such vitalized effects, when induced, naturally would diffuse into the relations between workmen and employer with ameliorating balm.

Here and finally may be pointed out more fully some of the connections of work with character which, only implied above, are the things most worth considering both as savers of energy, eliminators of fatigue, and incentives to efficiency. Here may be noticed the lines along which the wage-earner somehow should be brought face to face with his work and himself; and those along which the higher agencies of society well might investigate in order to find how such tasks of instruction and inspiration are to be assumed and achieved. There are very solid qualities and more modest graces of personality which issue to the toiler from occupation fittingly practised. To these he has a right as to the financial returns in a civilized community; and from these he may expect a self-development which shall render him increasingly more efficient.

## Work as Bread-Winning.

Among the solid benefits from work is bread-winning. "In the sweat of thy face shall thou eat bread" seems an accurate prophecy. The vast majority of every community are toilers by necessity. But "cursed is the ground for thy sake"—all this sweat and struggle and misery accomplishes for the race and for many an individual a physical survival and an improvement. But it works out for mankind far more than that; it is a hard schoolmaster to lead him from grubbing necessity upward toward self-reliant freedom. Economy and self-restraint are its starting points for this goal,—most important points, therefore, but with diminishing margin of utility as progress higher occurs and other virtues flourish more genial to elevation of spirit.

## Work as Responsible Activity.

But a concern for the quantity and quality of his product must animate every worker who is more than a bread-winner. Diligence and carefulness generally pay even financially in the long run, and by so much encourage themselves. That they do not always and immediately so pay is due to ignorance or injustice in the employer and is a shameful thing either way. But all the shirking of work which occurs cannot be charged to the employer. The most outstanding fact about workers as a class is the tendency to take and make things easy. This implicit form of vagrancy tempts the rank and file of the industrial army everywhere, though the Chinese are noted for native industriousness and work-reliability. The indifferent effort just cited about the employee, which frequently is justified economically, cannot be good spiritually. Economically one owes solely equivalent labor to his employer; spiritually, one owes supremely faithful labor to himself; and only from both considerations can he be fully loyal to society. Short weight in work and in sale look alike.

## Work as Native Creativeness.

Diligence and carefulness, under the inspiration of conscientiousness, are almost sure to grow beyond themselves, to enlarge into self-reliance and self-expression when the conditions are not unfavorable. A heightened sense of individual ability and worth lets loose a lot of hopeful enthusiasm, freeing in turn such abounding energies as nourish the originality, concentration, and perseverance promotive of creativeness. As merely an imposed task or a bread-winning necessity, work yields drudgery; as an assumed duty to do the best possible, it yields contentment; but as a spontaneous agent in achievement it yields positive delight. It then becomes the free self in vital action realizing upon its constructive endowment.

We hear much—and rightly so—about honoring one's calling. "Who sweeps a room as for thy laws makes that and the action fine." Without any sense of accountability in work, no real dignifying of it in one's own eyes can hold; but with a sense of joining something new to the world's stock of ideas or goods, there comes a more glorified pride of vocation. We well may believe that such exaltation was upon Michael Angelo when, engaged on one of his marvelous frescoes in the lofty dome of a cathedral, a spectator once questioned why he bestowed scrupulous care upon the upper side which no man could see from so far below. The reply received has come down to us with all its flavor of the classic age—that the gods see everywhere, from above.

Respect for self and for one'work, and for others and for their work, are the beginnings of the higher workwisdom. They could be assisted to birth and towards proper maturity by suitable measures and incentives. The narrowing of the individual, through division of labor and other conditions of high production, is one of the worst penalties incurred by the modern worker. And this gradual dwarfing or hindrance of his own consciousness of the cost is sadder still, since it prohibits struggling to overcome the evil. But at its best work is a fount of vitality to physical strength, moral stamina, and mental vigor. As bare industry it feeds the body and so is good; as responsible participation in the doing of the world's work it steadies and edifies the will and so is better; but as creative invention, it integrates and satisfies and develops the whole being and so is best. Original constructiveness is the goal of work as an efficient character-builder.

## Work as Refining Character.

Engaging as is this goal, it is not the highest: when work refines as well as evolves character, the ideal is reached. At every level the worker is both expressing and determining himself constantly, inevitably. As attempting merely to make ends meet he may find life barely worth the living; as trying to meet the superior obligations and opportunities of work, self-respect and dignity will germinate in him a strong root-stock of worthy inner being; as making original contributions to the rest of mankind, a keener sense of individuality and pride will body-forth a fuller and richer inner nature; but only when such a self-consciousness becomes infused with ideals, ambitiously to be striven for, does the flowering of work appear as a finished personality. Work is a means for acquiring a livelihood but also for cultivating and expressing a self-hood.

Not that work as such supplies all the factors or carries them to the highest point in character development, but it does much and prepares for more. It prepares for what broadly may be termed the graces of life. Apart from a tutelage by work, none can reach a soundness of sentiment or a dependableness of power or a breadth of mind commensurate with what is esteemed as genuinely good or great or true. To repeat, work is not simply doing something, nor simply driving the wolf from the door of vital needs, but above and beyond these it is character-building, and should be controlled with this consciously in view. Of personal character, the bulk unfolds from the routine of daily occupation, but much of the beauty from the rarer graces of occasion. Solidity of human character should take on, like the staunch Corinthian column, a consummation of charm as its divine right, for the crowning glory is not reached in virility alone. In brief, with the advance of civilization the duty and the right to be refined are as obligatory and inalienable as the duty and right to be busy.

The play of later life as the sub-strata and correlate of the work, more essential to some temperaments than to others, calls for full study. This as a practical matter between employer and employee generally is viewed as of no concern; still it must be admitted that when there is any depth of concurrent endeavor to make a reality of the spirit which our American principles and policies ideally acclaim, such questions will be live and potent. The frequently blind gropings of these lighter impulses and their saddening perversions, the enormous expense to the working classes through their indulgence, their irresistible and undying nature, and their import as previously set forth and everywhere evident, together suggest that the value of entertainment may be at par with that of employment and of refinement, each serving the other so peculiarly that the supplanting, the distorting, or the neglecting of one is the depreciating of all, and of development at large.

## Social Values of Personal Efficiency.

This eliciting of the higher personal factors in production which I now have called attention to at length would prove as beneficial to society as any other single reform. Some remarks of Professor Marshall about technical education aptly apply here: "According to the best English opinion, technical education for the higher ranks of industry should keep the aim of developing the faculties almost as constantly before it as general education does. A good education stimulates the workman's mental activities; fosters a habit of wise inquisitiveness; makes him more intelligent, more ready, and more trustworthy; it raises the tone of his life in working hours and out of working hours, and thus is an important means to the production of material wealth. . . . Since the manual labor classes are four or five times as numerous as all other classes put together, it is not unlikely that more than half of the best natural genius born into the country belongs to them; and of this a great part is fruitless for want of opportunity. There is no extravagance more prejudicial to the growth of natural wealth than that wasteful negligence which allows genius that happens to be born of lowly parentage to expend itself in lowly work. No change would conduce so much to a rapid increase of national wealth as an improvement in the facilities for enabling the clever son of a working man to rise. The wisdom of spending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment to give the masses of the people much greater opportunities than they can generally avail themselves of. For by this means many who would have died unknown are enabled to get the start needed for bringing out their latent abilities. And the economic value of one great industrial genius is sufficient to cover the expenses of the education of a whole town." All that is spent during many years in opening the means of higher education to the masses would be well paid for if it called out one more Newton, or Darwin, Shakespeare or Beethoven—and we may as well add, a Carnegie, a Morgan, or a Carrell.

That all interests of the work-problem in part should pool their resources and integrate their industry seems clear. The resulting decrease in expensive competitions and increase in economies would yield added products and profits to our knowledge. Each student of the legislative, economic, the medical, the psycological, or the practical bearings of the subject may be convinced in himself of what in general should and might be valuable, but he fails to make good with the others, partly due to his inability to furnish conclusive evidence, but much more due to inability to co-operate widely and heartily. To see what could be done, legislator, economist, physician, psychologist, industryman and the rest should get together into a scientific trust. Labor, as often pursued under present conditions, costs not only the sweat of the brow through action, but also the blood of the heart through pain, and the life of the spirit through stagnation. Unproductiveness is due not only to accidents, sicknesses, old age and unemployment, to be compensated by insurance, but is due also to fatigues, monotony, habituation and undevelopment, to be corrected by incentives. The goal is not only to do away with penury and misery by financial security, but also to rise above impersonality and mediocrity by inner initiative, to develop in each person a full and free democracy of efficient human traits, and thus to develop in society a full and free democracy of efficient human beings.

## THE DIAGNOSTICS OF INTERNAL MEDICINE.*

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EVERY disturbance of normal life phenomena has its origin in alterations of the material properties of the body elements. This is a truism which has been recognized since the methods of natural science have been applied to medicine.

Formerly, disturbance of function occupied the mind of the physician who systematized the individual case by its symptom complex; and the absence of knowledge, which was positive, of the anatomical changes underlying clinical conditions could not be replaced by the keenest observation of symptoms at the bedside, or by pure speculation.

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Thus we see that the ancient Greek physicians, who excite our wonderment by the clarity and exactness of their clinical pictures of disease, were painfully ignorant of either the essential nature of pathological processes, or the seat of disease. This is a striking example of the fact that the greatest gift of observation cannot offset lack of knowledge of material relations. It was thus that the imperfect notions of the ancients of the physiologic relations of the human body rendered their general pathological conceptions purely speculative, dogmatic and fantastic.

The assertion of Hippocrates, that mucous flowing from the brain through the cribriform bone into the lungs caused ulceration and inflammation of these organs, and further, the great significance attributed to changes in the bile in the origin of acute diseases, are examples of the purely speculative and bizarre medical teachings of the ancient Greeks. The same relations remained with the Romans as with the Greeks; although the advancement of anatomical dissection was not without its effect upon medicine. Pathological changes in organs became better known after the studies in anatomy of Vesalius, which were based upon dissections of the human body. The Sepulchretum of Bonnet, published in the seventeenth century, contained in this relation a very rich material.

But first in the eighteenth century, with the inductive method in the natural sciences, experiment came to full value and soared to a hitherto unexpected height. When physiology was founded by Harvey and Haller we can speak of the beginnings of scientific pathological anatomy. At this time Morgagni published his celebrated work, the "De Sedibus et Causis Morborum per Anatomen Indigatis."

The founders of Physical Diagnosis, Auenbrugger, Laennec and Scoda recognized the ever growing importance of pathological-anatomical changes in the physical diagnosis of disease and took advantage of the revolution in the theoretical and practical views of physicians, which was brought about by the new methods of investigation of such men as Bichat, Cruveilhier, and Lobstein in France, A. Vetter, Merkle, and, above all, Rokitansky in Germany.

In this connection follows historically the foundation of Pathological history. The discovery and description of vegetable and animal cells by Schleiden and Schwann led to an epoch-making reform, not only in pathology but also in physiology, and resulted in the production of a work written by a pupil of Johannes Müller, destined to become even more celebrated than the De Sedibus of Morgagni. The Cellular Pathology of Rudolph Virchow ranks as one of the finest mental products in any period of medical history. It paved the way for and made possible a long series of observations which have reduced many of the methods of procedure in clinical diagnosis to mathematical exactness. As examples may be mentioned the morphological examination of the urine, microscopical examination of the blood and tumor diagnosis.

While Hunter, Sedilot and others had already done work in experimental pathology, this branch of medical investigation naturally assumed its real importance after the advent of the Cellular Pathology. Here the classical experiments of Virchow on thrombosis and embolism produced a sensation and stimulated such investigators as Panum, O. Weber, Billroth and Cohnheim. Who can ever forget the fascinating experiments of Cohnheim on the vascular changes in inflammation?

In direct sequence to the work in experimental pathology came another field of investigation and discovery which, like so many of the great events in history, seems almost to have resulted from accident. Louis Pasteur had become the pupil of the great Mitscherlich and was devoting his life to the study of the laws of crystallography, when, like the rapid change artist, he suddenly appears in another role, which was forced upon him as a natural result of his wonderful power of observation. He was studying the polarization of the phosphates of ammonium and potassium when, to his surprise, he found that on one day they were levogyrators and on the next dextrogyrators. Puzzled by this phenomenon he soon found that this change in polarization was accompanied by the appearance of a scum which gathered at the bottom of the flasks holding his solutions. Microscopic investigation of this scum led to a discovery of the first magnitude, which, from a commercial standpoint, has proven of priceless value to the French nation and has given to medicine one of its most important branches. It was the work of Pasteur which stimulated Robert Koch to the pursuit of bacteriology in the field of medicine, with the results which are familiar to us all. This added another source of knowledge in the physical diagnosis of disease and greatly enhanced its possibilities of mathematical exactness. One has only to think of the diagnosis of tuberculosis by analysis of the sputum, or of typhoid fever by culture of the blood to realize the truth of this statement. Following these discoveries and with the ever increasing almost restless intensive activities along the lines of pathological anatomy, experimental pathology and bacteriology, came other important discoveries. Thus von Behring produced his antitoxines for diphtheria and tetanus; and the way was opened for the study of serum sickness and serodiagnostic methods. Paul Ehrlich was constructing his "Side-Chain Theory" and Wassermann was soon to publish his specific reaction as a diagnostic method for syphilis; while only very recently von Abderhalden, working upon the basis of Ehrlich's theory of the specific reaction of molecular groups in the somatic cells, has suggested a serum reaction for the diagnosis of pregnancy and cancer. It would seem to the writer that the lesson to be drawn from this brief historical sketch lies in the fact that it goes to prove that practically all of the real advance in our knowledge of the diagnostics of internal medicine is the direct result of our study of form, location and function in the human body, in their intimate relation to the biological sciences. Every new discovery has been made on this basis and the best of diagnostic work is now being done by those who have grasped this idea and are ever striving to combine good mental pictures of pathological form changes with their concomitant clinical semiology and the laboratory findings dependent upon them.

Thus and thus only are we fully equipped for the rational treatment of our cases, and it is only by these means that we can sleep with an easy conscience in the knowledge that we have given to the patients under our care the best that these modern times can afford.

This is an ideal and undebatable statement of fact; but it may be properly argued that the busy practitioner has neither the time nor the energy, even assuming him to possess the technical knowledge and skill to carry his diagnostic work into the laboratory. This is perfectly true: it is physically impossible for an internist with a busy practice to conduct personally all of the various assays and analyses which must be made for the clear understanding of the given case.

What he must do and have, however, is to put himself in possession of such knowledge of the anatomical and functional changes in the bodies of diseased people as will make it possible for him to convert the findings of his physical examination into pathological pictures: he must see the organ as it is in the body; and he must have both the wisdom and intuition to know what special type of laboratory work is most likely to yield the required results for his patients.

The marvellous advance in every direction in the practical application of laboratory technique to internal diagnosis has led one of our ablest internists in this country to make the statement that we should succeed in making a correct diagnosis in 90 per cent of all cases. This would perhaps be true if all of our cases could be put through the mill of a rigid laboratory examination covering all of his organic systems. But this cannot always be accomplished, either because of the patient's condition, the time limit in the case, or his financial state. Laboratory methods are very expensive to conduct. They are worthless and worse than that, if not conducted by a reliable and thoroughly equipped specialist. Like the violinist he must be in constant touch with his instrument or his technique will be faulty and his results unsatisfactory.

A Johns Hopkins physician was recently asked how the middle classes of moderate means were to get their diagnoses made. The inquirer remarked that the rich could afford it and the poor went to the hospital. The doctor replied to this eminently sane question that in Baltimore an effort was being made to send such patients into the hospital for as many days as might be required to constitute the diagnosis, giving them the advantage of the private rooms at a moderate fee, which would cover all of the necessary work to be done. After completion of the work, the patient is returned to his physician with a protocol of the findings which would form the basis for diagnosis and treatment. This certainly should be successful in some classes of cases, but could not be carried out in all.

For the remainder, it would seem to the writer that the physician himself should have the equipment of knowledge to locate the disease and the wit to elect such laboratory investigation as may be within the means of the patient and, at the same time, most likely to help him out.

This is neither fancy nor fiction. The pathologist's income is at best but small and never anything near to being commensurate with his outlay of energy, material and brains. He has come to stay, but even today neither he nor his methods are altogether understood. It is a common error to think that his work can be "done while you wait," whereas often several days must elapse before reliable results can be attained.

Of the newer methods in the diagnostics of internal disease some are indeed very striking. The sero-diagnostic method of Wassermann for syphilis is opening our eyes to the surprising prevalence of syphilis in the most unsuspected cases. Lumbar puncture in tabetics is yielding a relatively high percentage of positive results.

Gastro-enterology has done much to clear up obscure general conditions and has relieved intense suffering and saved life by the exact diagnosis of ulcer and other pathologic conditions of the prima viae.

Our ever increasing knowledge of the bacteriology of disease has thrown a flood of light upon many situations which were entirely baffling in the past. It has made for surgery its present possibilities.

Hematology, with its blood counts and cultures, has become a faithful indicator in the diagnostics of disease and in operative procedure.

Radiography has opened up an unseen world: it has not only increased tremendously our diagnostic possibilities, but has also added a new chapter to medico-legal procedure.

Others might be mentioned, but these are sufficient to emphasize the place which they are winning as sine quae non in the practice of the healing art.

But notwithstanding all this, it cannot be denied that nothing can altogether replace personal observation at the bedside and the instinct and intuition which come of long experience and contact with the sick. Hippocrates must always remain the model physician in this respect. His close attention to detail, his power of observation and inductive mind, easily entitle him to be regarded as the first physician of his or any other age. With the limited means at his command he did much that was astonishing in the relief of suffering and disease. But most important of all to us is the fact that he taught us the incalculable value of clinical opinion based upon personality, individuality and experience.

## THE PROSECUTION OF UNLICENSED PRACTITIONERS OF MEDICINE.

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THE prosecution of the unlicensed practitioner of medicine in the State of New York is a burden generously assumed since 1806 by the County Medical Societies of this State for the benefit of the general public. Despite the bitter criticism of the interested few that the registered medical physicians are actuated by selfish motives, I am convinced beyond any doubt that the physicians charged with the protection of public health act purely from an honest desire to protect the public from the vilest creature that I can conceive of—the individual who trades for personal gain upon the sufferings of human beings who pin their hopes of physical recovery upon him whose lying lips are sending them to their graves.

The field of medical quackery is indeed a wide one. During the past five years, it has been the privilege of the writer to present to the courts of the State of New York cases involving the prosecution of:

Illegal practitioners of medicine; Pseudo-physicians, unlicensed; Chiropractors; Mechano-Therapeutists; Magnetopaths; Hypnotists; Clairvoyants, Psychometrists; mental healers, faith healers; persons pretending to practice the religious tenets of real and fictitious churches; Naturopaths; Vitaopaths; Hydrotherapeutists; unlicensed Osteopaths; Metaphysicians; Therapeutic healers; counter prescriptionists.

Persons attempting to practice medicine unlawfully assume titles which will make it impossible to state that they declared they were practicing medicine or that they represented themselves to be medical doctors.

In a great majority of instances they seek to practice without the use of drugs. The extensive fraudulent practice of medicine is usually carried on under some form of incorporation. In many cases the corporation employs registered physicians, whose ethical standards are low, who give actual treatment to patients, either in person or through the mails.

Among these are:

Corporations illegally practicing and advertising the practice of medicine.

Corporations advertisting rheumatic cures.

Corporations advertising drink cures.

Corporations advertising facial surgery.

Corporations advertising the cure of venereal diseases.

Corporations advertising the sale of mechanical devices as a cure for physical conditions.

The courts of the State of New York have held that a corporation may neither practice medicine nor advertise to practice medicine. In New York State a corporation cannot employ a registered physician to treat patients applying for medical care. In some instances individuals have sought to avoid responsibility in any way by filing what is known as a certificate of trade name, stating they intend to do business under such trade name or trade designation. In a recent case a Supreme Court Judge has held that a lay person so employing a registered physician under a certificate of trade name was practicing medicine unlawfully. From the foregoing description of the unlawful practice of medicine, the scope and variety of the work to be done by a successful prosecuting attorney can be judged.

In addition to the work outlined there is also the question of the practice of abortion by midwives and registered physicians and the sale and distribution of articles being or purporting to be for the prevention of conception and the causing of unlawful abortion.

Successful prosecution of the unlicensed and illegal practitioners of medicine depends largely upon the credibility and reliability of detective agents employed for the purpose of obtaining evidence against medical malefactors.

In a great majority of instances the person who has suffered as a result of illegal or unlicensed practice is unwilling to publicly prosecute the offender.

Information is given concerning the illegal practice of medicine in many and devious ways. Investigation of the information by trained and trustworthy investigators is the best way, in my judgment, to obtain evidence sufficient to justify the institution of prosecution and the obtaining of conviction. The question of detective evidence is one that always arouses some ethical discussion. However, it seems to me that the public interest requires the presentation of a great majority of cases involving violations of the medical practice acts upon testimony obtained by investigators. Personally I can see no reason whatever for any question of venality in an investigator, if the attorney selects his agents carefully and watches their work.

I believe that the physicians of the Medical Society of the county or district, as the case may be, should see that locality is free from malefactors who pretend to relieve the suffering of men, women and children without the slightest regard for the results of their untrained and inefficient efforts.

Alleged practitioners of Christian Science, Advanced New Thought healing, Metaphysical healing and other forms of so-called religious and mental healing, should in my judgment be closely watched and subjected to vigorous prosecution. There seems to be no disease which these self-constituted agents of divinity and self-constituted superior mental beings do not consider themselves capable of curing by the unknown and unknowable means which they use or pretend to use. They undertake to treat for compensation without regard either for the condition of the patient or for the public or for the law governing the practice of medicine. I take it that the rigid enforcement of the medical laws is a duty which the physician owes, not only to himself as a physician, but primarly to the public.

Very determined attacks have been made upon the existing Public Health Law during the year 1914. The practice of medicine is defined as follows: "A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition."

"Physician" means a practitioner of medicine.

Two classes of men are recognized as physicians under the Public Health Law, practitioners of Medicine and practitioners of Osteopathy.

The so-called Chiropractors have made a desperate raid on New York City. But they have met with a rigorous prosecution. The writer believes that there are not more than three practitioners in the City of New York who have not been convicted of the unlawful practice of medicine. In effect these men are really trying to practice Osteopathy without acquiring the necessary qualifications. The State Osteopathic Society has undertaken a vigorous prosecution of the Chiropractors and Mechano-Therapists. The writer has had the honor of being requested to advise their counsel concerning proposed prosecutions and has been requested to assist in those prosecutions.

Chiropractors and Mechano-Therapists have attempted to legalize their efforts by having the legislature pass bills authorizing all the untrained and inefficient present practitioners, graduates of fake correspondence schools, and schools whose "Professors" have criminal records in many States of the Union, to practice under an exemption clause admitting them and then licensing, after examination, those to come afterward. "Let us in," is the cry of the medical fakirs, "and then we will help to improve conditions."

The fault is not so much with the systems of healing. It is with the ignorance and inefficiency of the practitioners and the extravagant claims made for the particular system of healing. One Chiropractor cheerfully offers to cure acute appendicitis without the knife and another states that spinal meningitis and cancer are often cured by him.

Mechano-Therapy is a system of healing of undoubted value. Its present practitioners are masseurs who style themselves "Doctors" and undertake to treat any disease without the use of drugs. Here again the deluded patient is the victim of the fakir who cares only for the dollar.

The Mental Healers either practice hypnotism or psychometry, Christian Science or Advanced New Thought. The writer is a believer in the absolute right of the individual to worship God as he sees fit. However, the worship of God ought not to be legalized blasphemy for the benefit of fakirs in office buildings, paying high rents, and maintaining expensive equipment from the profits of commercialized religion. The writer had the privilege of convicting the pastor of the Church of Universal Soul Freedom. He printed about twenty collegiate degrees after his name. His degree of Doctor of Divinity was obtained through a correspondence school out of existence in the west, whose address he could not remember.

The last bill passed in Albany legalizing the practice of Christian Science was hailed with joy by every fakir seeking to make his living through the use of religion. The bill would have made possible the practice of every form of mental healing without restraint. Representatives of the medical profession opposed the law. The speeches of Dr. J. Richard Kevin, then the President of the Kings County Medical Society, and Mr. Almuth C. Vandiver, then counsel to the Medical Society of the County of New York, opened the eyes of the legislators themselves to what they had done. Governor Glynn received a memorandum from Mr. Vandiver of cases convicted in New York City by the writer, showing the variety of fake religious practice in this city.

The memorandum contained the names, address, and records of persons convicted of practicing medicine under the cloak of religion. One Spinella had his own Church, known as "Spinella's Church." Practitioners of chiropractic alleged that the practice of chiropractic was the practice of the tenets of the "Religion of the Chropractic." A book on chiropractic was likened to "Science and Health" by Mrs. Eddy and alleged to be the bible of the "Religion of the Chiropractic." Absent treatment, love-silence, soul-culture, self-relaxation, hypnotic sub-conscious mental control, and other like euphonious phrases are used by the pastors, disciples, preachers, ministers, prophets and teachers of these fake religions to extract the dollars from a suffering and simple public. The greatest care and caution should be exercised by the medical profession to prevent these hawks from legalizing their despicable practices.

The maintaining of proper educational standards for entering any branch of the medical profession has been greatly aided by the work of Dental societies, the Pedic Society, and the Veterinary Surgeons. The need of efficient prosecution is recognized by all of these bodies and they are doing the work of protecting the public against the ever-present quack and fraud very efficiently.

In the opinion of the writer, the medical profession, conscious of its own rectitude, and proud of its record for seeking real truth, real advancement and real progress, should meet openly and courageously, without any hesitation, every effort of the medical malefactor, quack, charlatan, and fraud, to legalize his villanous criminality, and should arouse by the vehemence of its protests the public conscience to support the honest efforts made for public health.

## SOME REMARKS ON ENDOCARDITIS IN CHILDREN.*

**E. H. Bartley, M.D.,**

Brooklyn-New York.

WHETHER cardiac disease is more frequently met with to-day than in past years I cannot say, as I have no figures upon which to base a conclusion. In my own experience I can say that I have seen more cases than I did a few years ago. I have an impression that it is on the increase, especially during the last two years. I presume that no one will deny that the cause of endocarditis, whether in adults or children, is an infection, usually of the rheumatic family. The portal of entrance into the system of the poison of rheumatism is not always to be determined. The evidence against the tonsils, however, is strong. The text books tell us that endocarditis is usually due to the rheumatic poison. We are all aware of the fact that many cases occur in children who have never had what we call rheumatic fever, with inflamed joints. We also know that rheumatic fever is rare in children under two years of age, or even under three years of age. If we regard all cases as rheumatic which have had at some time, either before, during or subsequent to the attack of endocarditis, some one or more inflamed joints, or those who have had chorea, or tonsilitis, or some other known infection, then the vast majority of the cases are due to the rheumatic poison. Adopting this classification, Dunn, of Boston, finds that of 304 cases of cardiac disease he investigated, 87 per cent were of this origin. He remarks that, on this basis of classification, no acute febrile cardiac disease fell under the head of unknown etiology, every such case being due to rheumatic fever or to some other recognized infection. The cases of unknown etiology were all cases of chronic cardiac disease. The relative proportion of acute and chronic cases which entered the hospital were 78 per cent of acute and 22 per cent of chronic cases. As a very large number of chronic cases do not enter the hospital, it is fair to assume that these figures do not represent the actual proportion of acute and chronic cases. This would indicate that the number of cases due to unknown etiology is much larger than is usually supposed. In children we frequently see cases of acute endocarditis as a complication of measles, diphtheria, scarlatina, and tonsillitis. In fact, there are few diseases of bacterial origin with which it has not at times been associated. Streptococci, diplococcus of rheumatism, staphylococci, pneumococci, gonococci, the bacilli of typhoid, diphtheria, influenza and the colon bacilli have been found in the valvular vegetations. So, too, do we meet with inflamed joints in all these infections. We cannot regard these inflamed joints as rheumatic. Poynton (Dis. of Children, p. 415, Garrod, Batton & Thursfield, London, 1913), in an analysis of 600 cases of cardiac disease, met with in dispensary service in England, found 331 cases having active rheumatism. In 93 cases there was active chorea without active rheumatism. In 68 the disease was congenital; 34 followed immediately upon scarlatina; in 6 there was tuberculosis; 6 followed measles, 5 diphtheria, 5 influenza, 5 erythema nodosum, 3 pneumonia, 3 epilepsy, 2 renal disease, 1 syphilis and 38 of unknown cause; *i. e.,* 6 per cent were of unknown cause.

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* Read before the Brooklyn Pediatric Society, December 16, 1914.

In relation to tonsilitis he says:

"1. A micrococcus found in rheumatic lesions, capable of producing similar lesions in rabbits and monkeys, is found in the tonsil.

"2. It may be found in unhealthy tonsils of the rheumatic who have suffered from attacks of rheumatism, even when this disease is quiescent.

"3. Isolated from the tonsil of the rheumatic, it will produce, on intravenous injection into animals, heart disease, including endocarditis, myocarditis and pericarditis."

He evidently regards tonsillitis as usually rheumatic. He remarks: "It is unhealthy conditions of the throat, and not tonsilitis only, that must be considered in this study of heart disease." He states that "the exciting cause of rheumatic morbus cordis is a diplococcus of the streptococcus group. If this explanation be not accepted, the only alternative is a hypothetical infection of unknown nature." The predisposing causes, he says, are heredity and sudden changes of temperature. We are not at the present time in a position to define rheumatism to our satisfaction. Therefore it is a mistake to say that endocarditis is usually due to rheumatism in children. It is safe to conclude that it is due to some form of infection. There are children who have chronic tonsillar infection, lasting for months or years, which may, probably, be the source of an acute endocarditis without an acute tonsillitis ,and may be overlooked. The importance of careful inspection of the tonsils in a case of an acute or chronic endocarditis is self-evident. The child with a cardiac lesion, who has infected tonsils, should certainly have this port of entry closed. It has long been recognized that certain families seem especially prone to rheumatic attacks. The older writers have called this a *rheumatic diathesis.* We still recognize the tendency in every person who has had one attack to recurrence of the attacks. There is either a peculiar susceptibility to rheumatic infection, or such persons harbor the infection in a latent form, which may become active again at varying intervals. Probably the crypts of the tonsils are the location of the retention of the organisms. It has been noticed that persons with the so-called diathesis are subject to frequent attacks of follicular tonsillitis. The retention of this rheumatic poison may possibly explain the recurrence of rheumatism and the tonsillitis, especially in children. The type of tonsil which seems to be most likely to harbor the organisms and lead to the cardiac disease is the large, spongy, ragged form, as distinguished from the hard, fibrous form. The rheumatic poison shows a special tendency to attack the valves of the heart, usually of the left heart; the diphtheria poison the myocardium, and the pneumococcus the pericardium. It is doubtful, however, if the myocardium ever escapes entirely during a severe attack of endocarditis. The endocarditis is easier of diagnosis than the myocarditis, and unless the latter is severe, it may be overlooked. Certainly in the graver forms of endocarditis, the muscle is usually more or less involved. It is also true that a myocarditis may progress so far as to cause death without endocarditis, as, for example, in diphtheria. One of the early signs of myocarditis is irregular heart beat or palpitation. Later, syncope and cyanosis are more grave symptoms. In many of the milder attacks of endocarditis, which progress favorably, no signs of myocardial disease can be made out. It must not be forgotten that shortness of breath and edema in children may be caused by anemia, and will disappear when this condition is relieved. An examination of the blood should therefore be made before rushing to the conclusion, in a case of endocarditis, that these symptoms indicate myocardial involvement. One peculiarity, I think, in endocardial murmurs in children is their rapid change in character. They frequently appear with great rapidity and the sounds often change from day to day. A murmur may be soft and breezy today and tomorrow it may be louder and rasping or it may be musical in character. The onset of endocarditis in children is usually abrupt, while in adult life it is insidious, manifesting itself chiefly by the appearance of a murmur. In children the acute endocarditis is usually accompanied by precordial pain, palpitation, cough, dyspnoea or orthopnea with, later, enlarged liver and oedema. These symptoms in the adult are more often associated with over-strain or loss of compensation. In children they are due to the cardiac infection itself. Text books tell us that the severity of an attack is not measured by the loudness of the murmur. It is hard to convince one's self that a loud, rasping murmur is not more serious than a soft, blowing one. We usually judge of the severity of a case, not by the ausculation alone, but by the temperature, dyspnoea, precordial pain, etc. We cannot always predict from the loudness of a murmur during the attack what the final result is to be. Even after the acute attack has subsided, we cannot say what will be the future history of the remaining murmurs. In some cases even very loud, rough murmurs will gradually disappear, while in others, they will remain or become worse. It is probable that much depends upon the age at which the trouble appears, and upon the amount of myocardial involvement. Where the heart muscle is uninjured and the compensation is properly maintained, either the murmur disappears or very little inconvenience is felt from its presence. When the heart muscle has been weakened, the murmur is likely to remain. If the attack of endocarditis occur before puberty, and recovery from the acute attack takes place, then the little patient has before him a very important period, which is very likely to affect the heart, either to improve it or to prove disasterous. I have seen many cases in whom this period of change has almost entirely obliterated what appeared beforehand to be a very serious valvular disease. On the other hand, it is never safe to promise parents that the child will grow out of a heart murmur. As above stated, much depends upon the condition of the heart muscle. Statistics show that the earlier in life a valvular disease is acquired, the more chance there is for its disappearance before adult life, and the less likelihood of future inconvenience. In fact, in cases where a child has an acute inflammatory cardiac disease, under six years of age, any remaining lesion of the valves is likely to grow better with growth and development. The immediate mortality from acute rheumatic fever is about 20 per cent. The subsequent mortality of children with endocarditis is about 50 per cent. The large number who die subsequent to the first acute attack is due to the great liability in children to recurrent attacks in which the heart may be involved. This liability to recurrence is more marked in children than it is in adults. The greatest mortality from rheumatic cardiac disease is before adult life, *i. e.*, before 14 to 16 years of age. After that age the mortality rapidly decreases to about seven per cent. If, then, a child under eight years has acquired a heart lesion and lives to become 15 years of age, his chances for an active life become pretty good until 50 or 60 years of age. That is, of those who reach adult life, nearly 80 per cent have slight or no disability because of cardiac disease. A child who acquires a heart lesion after eight or ten years of age has a much less chance to live through puberty, and far more chance for disability after adult life, than one who acquires it before eight. The disability does not seem to depend on the particular valve involved, except that aortic disease is much more serious than mitral. The causes of the great mortality from rheumatic fever in childhood are: 1st. Their great liability to cardiac involvement. 2nd. Their liability to recurring attacks. 3rd. Their general liability to infections in general, as well as to rheumatic infection. The most common cause of death in cardiac disease in children is heart failure, either from myocardial degeneration or from a recurrence of an acute attack. A failure of compensation from over-exertion is much less common. This is the reverse of that occurring in the adult.

*Prophylaxis.*—If, as I have intimated, the tonsils are the chief port of entry for the infections liable to cause cardiac disease, the importance of tonsillar infection becomes self-evident. It would be of interest to know if the wholesale examination of throats in school children by the inspectors of the Department of Health will limit these accidents to an appreciable extent. I have no data upon the subject, and it may be rather early to expect much in that direction as yet. A child who has one attack of rheumatic fever, or who has had recurrent attacks of follicular tonsillitis, should certainly receive attention to this possible source of the rheumatic infection. However, we must not suppose that every infected tonsil will cause cardiac disease, but we must admit that some do. Until we know more of the nature of rheumatic infection we can do nothing more than this to prevent it except to promote the general health. The treatment of endocarditis in children resolves itself into two parts: 1st. The treatment of the acute attack; and 2nd, the management of the case after the acute attack, when valvular or myocardial injury has been done. The chief line of treatment in the acute attack is rest in bed as long as there is any fever, and after that, as long as there is any abnormal frequency in the pulse rate, or the least irregularity. The frequency and rhythm are the things to be carefully watched. When the pulse rate comes down to or below 100 and is regular in rhythm, we may allow the child to sit up in bed and have his playthings. This will usually require from four to eight weeks. Salicylates and alkalies are the best drug treatment. We may then cautiously let the child out of bed, watching the heart beat on slight exertion. When the child is out of bed, with a murmur remaining, it is a matter of judgment as to the amount of exercise allowable. It is then that the trouble often comes. The family will either be too cautious and deprive the child of needed systematic exercise, or they will allow too much freedom. The rate and regularity of the pulse is the best guide in allowing exercise. Anemia will most likely need treatment, and the digestion must be watched and kept in proper condition. If compensation is good, graduated exercise in the open air should be indulged in for the sake of the general health. Throat inflammations should receive immediate treatment when they occur, as our best, and almost our only, means of preventing recurrences of cardiac attacks.

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# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

APRIL, 1915

### MINUTES OF STATED MEETING, MARCH 16, 1915.

The President, Dr. Russell S. Fowler, in the chair. There were about 450 present. The meeting was called to order at 8.30 P. M., and the minutes of the previous meeting were read and approved.

### *Report of Council.*

The Council reported favorably upon the following applications for membership:

Walter J. Campbell, 384 Union St.; L. I. C. H., 1899; proposed by J. J. Sheehey; seconded by Membership Committee.

George A. Clark, 348a Ninth St.; L. I. C. H., 1898; proposed by J. J. Sheehey; seconded by Membership Committee.

Aurelius De Yoanna, 565 Henry St.; Bellevue, 1897; proposed by J. J. Sheehey; seconded by Membership Committee.

Gaetano De Yoanna, 565 Henry St.; L. I. C. H., 1908; proposed by J. J. Sheehey; seconded by Membership Committee.

Henry J. Dillberger, 432 Ninth St.; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee.

John H. Isquith, 674 Bedford Ave; Cornell, 1909; proposed by E. K. Tanner; seconded by N. T. Beers.

Henry W. Kemp, 855 Fresh Pond Road; Univ. Toronto, 1906; proposed by L. J. J. Commiskey; seconded by Membership Committee.

Nicholas J. McCaul, 278 Ninth St.; Balt. Med. Coll., 1906; proposed by J. J. Sheehey, seconded by Membership Committee.

Wm. E. McCormick, 36 Seventh Ave.; Albany, 1911; proposed by S. H. Lutz; seconded by F. D. Bailey.

Wm. Francis McKenna, 36 Clark St.; L. I. C. H., 1913; proposed by R. F. Barber; seconded by A. Murray.

Anton F. Mannel, 923 Bushwick Ave.; Univ. & Bell., 1914; proposed by E. L. Schaefer; seconded by C. Fulda.

Abraham Ravich, 820 Nostrand Ave.; P. & S., N. Y., 1912; proposed by I. D. Kruskal; seconded by J. Linder.

Wm. B. Rosecrans, 1494 Greene Ave.; Albany, 1901; proposed by R. S. Fowler; seconded by Membership Committee.

Wm. Fred. Walenta, 396 Graham Ave.; L. I. C. H., 1911; proposed by R. S. Fowler; seconded by Membership Committee.

Joseph F. Ward, 405 Tenth St.; Balt. Univ., 1899; proposed by J. J. Sheehey; seconded by Membership Committee.

### *Applications for Membership.*

Applications for membership were received from the following:

James Elmer Baker, 1238 56th St.; Cornell, 1910; proposed by C. F. Pabst; seconded by Membership Committee.

Anthony Cestare, 198 Sands St.; L. I. C. H., 1911; proposed by C. Goldman; seconded by C. F Pabst.

Leo Faske, 1573 Eastern Parkway; L. I. C. H., 1912; proposed by C. Goldman; seconded by L. Fisher.

Henry S. Friedland, 319 Lorimer St.; L. I. C. H., 1907; proposed by E. L. Schaefer; seconded by Membership Committee.

Simon Friedland, 510½ Sixth Ave.; L. I. C. H., 1913; proposed by C. Goldman; seconded by Membership Committee.

Daniel M. McCarthy, 359 Rugby Road; Queen's Univ., 1903; proposed by C. F. Pabst; seconded by Membership Committee.

Thomas M. Reid, Jr., 104 Pioneer St.; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee.

Daniel R. Robert, 261 Hicks St.; P. & S., N. Y., 1911; proposed by W. H. Rankin; seconded by H. A. Fairbairn.

Esmonde B. Smith, 827 President St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee.

Irving Tran, 179 South 2d St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee.

Max Wachsman, 429 43d St.; Albany, 1901; proposed by R. H. Pomeroy; seconded by Membership Committee.

Joseph D. Daly, 901 Union St.; Illinois Med. Coll., 1899; proposed by E. M. De Castro; seconded by Membership Committee.

Edward R. Dorney, 309 11th St.; L. I. C. H., 1912; proposed by S. J. Post; seconded by Membership Committee.

George Bennett Fielding, 350 Ninth St.; L. I. C. H., 1899; proposed by O. E. F. Risch; seconded by Membership Committee.

Herbert Charles Fry, 356 Ninth St.; L. I. C. H., 1898; proposed by J. J. Sheehey; seconded by Membership Committee.

Mark Gordon, 1076 Eastern Parkway; Baltimore Med. Coll., 1900; proposed by Membership Committee; seconded by S. J. MacNamara.

Harry Mordecai Greenwald, 303 Ditmas Ave.; Univ. & Bell., 1910; proposed by J. P. Pendleton; seconded by Membership Committee.

Harrison F. Murray, 408 Grand Ave.; P. & S., N. Y., 1912; proposed by C. F. Pabst; seconded by Membership Committee.

Aaron Roth, 1133 Eastern Parkway; Univ. & Bell., 1908; proposed by N. H. Rachlin; seconded by S. Shaftel.

Jacob Schwartz, 604 Stone Ave.; L. I. C. H., 1911; proposed by J. P. Pendleton; seconded by Membership Committee.

Frederick Leo. Weygandt, 647 Bedford Ave.; P. & S., N. Y., 1901; proposed by S. C. Blaisdell; seconded by Membership Committee.

### *Scientific Session.*

Paper: "The Medical Aspects of the Workmen's Compensation Law."

By Frederick W. Loughran, M.D., Med. Adviser, State Ins. Fund., N. Y. State. Discussion by Drs. Thomas Darlington and Wisner R. Townsend.

Paper: "The Diagnosis of Stone in the Kidney and Ureter" (with lantern slide demonstration)

By Hugh Cabot, M.D., Boston, Mass. Discussed by Henry H. Morton, M.D., Burton Harris, M.D., Paul M. Pilcher, M.D

### *Miscellaneous Business.*

Dr. William J. Cruikshank, Chairman of the Committee on Legislation, spoke as follows: Mr. President:

Believing that the Tallett-Jones Bill, which has passed the Senate, is a menace to public health, I move you, that a special committee be appointed for the purpose of communicating with the Governor of the State and urging upon him the importance of vetoing the measure. Carried.

Dr. John Osborn Polak read the following report:

"The financial situation in this Society has received careful consideration from your Board of Trustees, and to this end a committee was appointed to investigate the sources of income and compare these with those of the New York Academy of Medicine and Boston Medical Library, organizations owning their plants. The statistical data has been compiled by Mr. Huntington. The following is a summary of a single year:

| | New York | Boston | Brooklyn Med. Soc., Co. of Kings |
|---|---|---|---|
| Value of plant | $504,426 | $198,280 | $100,000 |
| Vols. in Library | 90,000 | 70,000 | 70,000 |
| Annual Dues | $20 | $10 | $10 |
| Paid up active members | 1,162 | 590 | 818 |
| Invested endowment funds | $110,537 | $180,341 | $9,091 |
| Annual interest on mortgage | none | $1,395 | $1,750 |
| Annual incomes from rentals cash | $4,682 | $3,965 | $130 |
| Spent on Library, excluding salaries | $9,578 | $6,839 | $890 |

"It will be apparent to you all: *First,* that our endowment produces an income of less than $500 a year. *Second,* that the interest on our mortgage is a large and constant fixed charge. *Third,* that we have practically no income aside from the dues from members. *Fourth,* that we are unable to make necessary expenditures for our Library. Notwithstanding this poor financial showing, in one year sixteen societies held meetings in this building, excluding the Medical Society of the County of Kings, from which the Society received in lieu of rental the total sum of $130 in cash, while the New York Academy and the Boston Library received respectively $4,682 and $3,965. Hence your committee recommends the adoption of the following resolution:

"The Medical Society of the County of Kings hereby instructs its Trustees to secure such reimbursement for the use of the section rooms, general assembly room, and such other parts of the building as may be used by societies other than those affiliated with the Medical Society of the County of Kings, as shall defray the cost of lighting, heating, service, and such other expenses incidental to the use of such rooms as may, in the judgment of the Trustees, be proper.

Respectfully submitted,

John O. Polak,
Russell S. Fowler,
Stephen Lutz,
*Committee."*

Adopted by unanimous vote.

Dr. Stephen H. Lutz read a letter from Frederick L. Cranford, Esq., enclosing a check for $1,000 for the William Browning Library Fund, in accordance with the terms of the will of the late Dr. George McNaughton. Dr. Lutz called attention to the fact that this was the first gift that had come to the Society in the form of a testamentary bequest, and it was unanimously voted that he be empowered to communicate the sentiments of the Society to Mr. Cranford.

Meeting adjourned at 11 P. M.

Burton Harris,
*Secretary.*

The following resolutions were passed by unanimous vote at a regular meeting of the Council on March 10, 1915, and ordered printed with the proceedings of the Society:

In a review of the recently published annual report of the Health Officer's Department of the State of New York, the following accomplishments are worthy of note:

1. The complete protection of the public health at this port, evidenced in the fact that not a single case of quarantinable disease traceable to maritime commerce appeared during the year in the Port of New York.
2. The detention and treatment of twenty cases of typhus fever and the detention of 2,633 contacts, and their sanitation by methods so scientific and thorough that not a single secondary case occurred during the visitation.
3. The detention and treatment of sixteen cases of epidemic cerebrospinal meningitis, with complete recovery in thirteen cases and the detention for observation of 574 contacts without secondary infection.
4. The discovery of all persons suffering from smallpox arriving on vessels, and the prevention of any infection attributable to maritime commerce in the Port of New York.
5. The installation of effective plague prevention regulations which prevented here the introduction of plague, as experienced by New Orleans and other United States ports.
6. The promulgation of cholera precautions which have set a standard of approved modern quarantine practice.
7. The construction of a new bacteriological and pathological laboratory and the employment as director thereof of an expert bacteriologist with a particularly appropriate experience in combating epidemics of major quarantinable diseases.
8. Increased thoroughness and expedition in the examination of vessels and passengers.
9. The establishment of a system of valuable scientific and statistical records.
10. The administration of the department so economically as to result in a net cost to the state for the year of $49,760.79, a cost which would have been greatly reduced, if not entirely eliminated, had not the outbreak of war in the early part of August put a complete check on immigration.

Whereas, The Medical Society of the County of Kings is cognizant of the above-mentioned facts, and inasmuch as these facts represent efficiency, scientific progressiveness and economic executive ability of the highest order,

*Be it Resolved,* That the Medical Society of the County of Kings, through its Council, gives its unqualified endorsement to the administration of Dr. Jos. J. O'Connell as Health Officer of the Port of New York, and

*Be it further Resolved,* That this action of the Medical Society of the County of Kings be made public and a copy of the same forwarded to the Governor of the State of New York.

# EDITORIAL

## THE HEALTH DEPARTMENT AND PROGRESS.

PURSUANT of its policy to keep the general public informed of its activities, the Health Department of New York City has printed and distributed a thirty-page pamphlet summarizing all too briefly what has been accomplished in the year 1914 toward the improvement of public health. It is a matter of considerable regret that details are lacking upon which to check up the conclusions that Commissioner Goldwater has published. For instance, a paragraph is headed "Advisory Council Formed," and in the briefest way it is stated that this consists of representatives of the various trades that regularly come under the supervision of the Department and also includes persons identified in some way with public health administration and allied institutions and societies. The deliberations of the Advisory Council should be published for general information if only that light might be thrown on one or two recommendations of doubtful value that seem to have emanated from this body. There is a present-day tendency toward experimentation based upon recommendations by enthusiasts of all kinds. The result is a restlessness and sense of insecurity felt by the municipal employees. It would be only fair if the standpoint of the employee could be taken up, investigated and published with the same thoroughness that is permitted the amateur dabblers in municipal government who seem to dominate the present situation. As a matter of fact, not only the Department of Health, but those of Education, Police and Public Charities have been made the subject of experiments more or less revolutionary within the past few years, and it is doubtful whether those in whose interests the changes have been made have been benefited. For instance, it seems to be a pet idea that it is better to economize in the food and care provided for patients in the city hospitals, but the saving effected seems to have been offset by the expenses of investigation and it yet remains to be seen whether the hospitals are being better managed and run on sounder business principles as a result, or whether the end result so far has not been to cramp the internal administration of the hospital by undue interference with food, supplies and nursing.

Rumor credits this same Advisory Board with the pronouncement that every child in public schools is entitled to free medical care in order that its capacity for learning may not be cramped. If one subscribes to that statement he must also subscribe to its collary that the scholars in parochial and private schools have the same right and should receive free medical care. The next logical step is the supply of free meals and free transportation; free books and free baths they already have. Free medical attendance they now have in part. Is the State yet prepared to back up the socialistic tendency of the Health Department and, in addition to the free clinics for tuberculosis, whooping cough and serum diagnosis, to free hospitals for contagious disease, to its extension of the various activities included under child hygiene, to add the only thing needed for complete socialization and provide salaries for all physicians registered with the Department of Health? This is a tremendous problem, one that reaches into so many varying activities that its consideration may well make physicians look with anxiety to the future. Upon the one side stands the idealist with his incontrovertible statement that the public good and the private good are identical and that medical benefits extended to the masses result in increased individual safety. He argues, and with reason, that every individual should benefit by the best that medical skill, which is, in its ultimate analysis, the study of human welfare, can afford. Upon the other hand stands the physician, educated at his own expense, surrounded by constantly increasing obstacles of legal requirement, hampered by the public attitude, prosperous or impoverished as the times are prosperous or bad; an anomalous creature who is constantly striving to do away with the source of his own living; independent in a way, and yet more a servant than any other member of the community. Between these two opposing forces stands the question of the public good. Is it wise to provide even medical service without cost? Will it not increase the tendency to pauperization that is already a serious factor in the administration of public charities? Until such time as every citizen is compelled to contribute his share toward the common cost of living—his tax, if you prefer the word—is it right to throw upon the shoulders, not only of the actual taxpayer, but of the large body of physicians and contributors to hospitals and medical charities, an increasing burden? In Switzerland they have met this problem squarely by exacting from every citizen, no matter how poor, a definite proportion of his income as a sick fund. In England, State and individual each contributes a share toward the cost of sickness, but here in New York, where even the poorest have money to spend upon dress, the theatre and their bellies, the Department of Health is leading the way toward the active socialization of a huge, lawless, hetrogenous community that cannot by the widest stretch of imagination be regarded as ready for socialism.

Among the evidences of development of its unquestioned functions, the new system of district administration calls for entire approbation. It is pointed out that the present arrangement of the Health Department into bureaus causes overlapping duties that often bring the employees of several bureaus into a single case, resulting in public annoyance, multiplication of visits and wasted time and energy. The department has established an experimental health district where all the activities of the department are locally directed by a single district chief. Could this unit system be extended to include the activities of the tenement house, building department, factory inspection and fire prevention bureaus as a part of the Department of Health, a vast saving would accrue to the city and far better conditions would be established for the individual citizen who now complains with justness of the multiplication of inspections to which he is forced to submit.

It would be extremely interesting to analyze the entire report, could one spare the time. The development of the department is a matter of public concern and of vital interest to physicians. Just now its position is peculiar in as much as it depends for its activities upon physicians; that it represents the only real restraint that physicians can exercise upon the general public; and yet its activities are increasingly destructive to independent medical practice in as much as it is increasing facilities for free treatment and supplying an incentive for the socialization of medicine. From time to time disclaimers of this intention have appeared and officials of the department have publicly explained the desire of the department for cordial co-operation with the medical profession. In spite of these disclaimers and the apparently honest conviction that the department is endeavoring to co-operate, the fact remains that the trend of departmental acivities is to constantly reach out into new fields, the logical development of which must be eventual socialization. However attractive this programme may be made to appear, it must be many years before society as now constituted can adjust itself with fairness to this new conception, and consequently the activities of the Health Department must cause some apprehension and question as to their wisdom in assuming functions for which the community is not yet ready. The development of its legitimate field of activity, as indicated by the report under consideration, is a matter of congratulation which should include not only the Commissioner but all his subordinates.

H. G. W.

## QUARANTINE.

ONE turns the pages of the Annual Report of the Health Officer of the Port of New York for 1914 with decided satisfaction. As a record of accomplishment it speaks well for the efficiency which that department of the state health service has shown and, in addition, is a valuable contribution to medical progress, as it contains very full records of the visitations of typhus fever and epidemic cerebro-spinal meningitis of last year. Altogether, twenty cases of typhus, with two deaths, were cared for in the quarantine station, besides 2,633 contacts who were held for observation. The detailed report, both clinical and pathological, of these cases and the comparison of the health officer's findings with the work of Dr. Harry Plotz, seems to justify the conclusion already published that Brill's disease is really typhus fever of a milder strain. The report on meningitis is equally illuminating. It would be well worth while could the administrative details, as shown in this report, be more widely published, as the magnitude and complexity of this important branch of the public health service is too little known. If one were to base his judgment upon the facts which the present health officer has published as the record of his department, he would be led to question the wisdom of including this service in the Federal marine and public service, as has been done in the majority of the smaller ports of entry, forty-eight of which are now under Federal supervision. While in theory centralization of effort and purpose makes for greater efficiency, it happens that exceptional circumstances warrant the existence of independent units and the mass of business transacted through the Port of New York, which also handles the bulk of European immigration, demands that a proposal of this kind should be thoroughly investigated before receiving serious consideration. The health problems of the City and Port of New York are at present very intelligently and efficiently handled by the co-operation of the Health Commissioner, the Port Officer and the Police Commissioner, an interlocking that is demanded by social conditions that obtain in very few other American cities. The present efficiency of the service speaks for the excellence of present arrangements. We wonder whether the committee of the New York Academy of Medicine that has recommended this change has looked into the situation with sufficient thoroughness to warrant the stand they have taken.

H. G. W.

## SEX INSTRUCTION.

IT is with considerable satisfaction that one turns the pages of the booklets on sex education published by the Young Men's Christian Association for young men. It shows that the problem of how to reach to a better standard under the moral law is being approached in an eminently sane and decent manner. There has been prevalent for generations a degree of prudery that has made sex hygiene a most difficult matter to approach and has even spread to include most of the practical aspects of married life. As a result a most unfortunate attitude has grown up which is, we believe, largely responsible for gross misconceptions, to say nothing of the spread of venereal disease because of ignorance and an unwillingness to tackle the problem on the part of those who should be best fitted to do it, namely, parents. Just how much should be taught and how far the question should be agitated outside the home is a matter for earnest debate. There can be no question that the ideal instructor is a sympathetic father or mother and the ideal place the home, but in the larger cities at least real homes are rapidly disappearing, swept away by the craze for excitement at any cost. The parents seem too prone to indulge their selfish pleasures to impose old-fashioned home influences and a precocious license is permitted children in consequence. As yet the average parent is too ignorant, or too selfish, or too timid to grapple with the subject effectively and it seems to be imposed upon the educator and physician to co-operate with the more far-seeing among the clergy in bringing about a rational understanding of this all important matter.

Quite recently a young man contemplating marriage requested the writer's views in regard to Pamphlet No. 4 of the Sex Education Series already mentioned, upon engagements and marriage, adding the request that he might seek additional advice after the book had been read. It is with uncommon satisfaction that one closes the Rev. Orrin G. Cocks' pamphlet, for it deals with this particular phase of the problem in a straightforward, manly and rational way. The family physician who is not infrequently consulted on such topics will find it most helpful to supplement his special knowledge with this series of books, which will help him to a broader understanding of this most vital of human problems.

H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

*Regular Meeting of the Brooklyn Surgical Society, June* 4, 1914, 8.30 *P. M.*

The President, Russell S. Fowler, M.D., in the Chair.

*Program.*

Case Reports:

1. (a) Gun-shot Wound of Abdomen. Patient.
   (b) Perforation of Duodenal Ulcer. Operation. Patient. W. H. Rankin, M.D.
2. Abscess of Lung. Patient. J. M. Scannell, M.D.
3. (a) Hepatoptosis with Torsion of Ligaments Simulating Gallstone Colic. Operation. Patient.
   (b) Cystic Degeneration of Breast with Colored Discharge from Nipple. F. E. Brown, M.D.
4. (a) Rupture of the Lung Without Fracture of Ribs.
   (b) Perinephritic Abscess Simulating Appendicitis. W. S. Simmons, M.D.

### Gun-Shot Wound of Abdomen. Patient.

*W. H. Rankin, M.D.*

The first case that I wish to present is that of a man who was brought into St. John's Hospital, on September 19, 1912, with a gun-shot wound of the abdomen. He was in an extremely exsanguinated condition when he reached the hospital and very shortly afterwards he was put on the table and the abdomen opened and the small intestines were found to have been perforated in eight or nine places. An X-ray plate was taken and it showed that the bullet had dropped into the left iliac region, about the location of the internal ring. The intestinal wounds were closed and the abdomen was closed with drainage. The man did very well for a few days; indeed so well that he was put on a soft diet, the bowels were moving regularly, the distention had subsided and he seemed to be going on very well. At about the end of ten or twelve days, however, the house surgeon drew my attention to the fact that there was a considerable suppuration of the wound and on examination I found a knuckle of gut presenting itself. This perforated in a day or two and at the same time the patient developed a penumonia which became complicated with pleurisy and with an unresolved pneumonia, and he had a very troublesome cough with pleurisy. This was a new situation. Here we had a hernia of the abdomen with a protrusion of the knuckle of gut and one of the most spasmodic coughs with which we could possibly have to deal. The man, losing his nourishment, as he was, and water-logged, as he was with pneumonia (he was a strong and vigorous man) staggered to his feet as it were and came through it, but the cough persisted for several weeks. It was a most terrific cough. He would hold his breath and bear down and it would seem that the entire gut must be forced out. During this period, on two different occasions, I closed the wound in the gut and tried to draw the abdominal wall together, but with the same result, that the coughing would cause it to tear away. He went on then gradually losing weight and strength and, of course, receiving what nourishment he could get from only a small section of his gut, practically the duodenum only, still he managed to keep an even keel and went on and after a while his bronchitis slowly cleared up and he was willing to hazard a chance on taking a general anesthetic and having the wound closed.

In the meantime another adjacent knuckle of gut had presented itself by these coughs and that also perforated. The first knuckle that presented was possibly one and one-half to two inches long. The second knuckle was possibly not more than one inch.

We waited until about the tenth of February when things seemed favorable and sufficient time had elapsed to allow the adhesions to become pretty well absorbed as we hoped. He bore the anesthetic very well. The fascia and muscles were exposed, the abdomen was opened fully and adhesions were found to have become absorbed until they were practically of the consistency of cobwebs in almost every direction. There were a few bands which were very easily taken care of. Then I divided the edges of the wounds of the intestines and did a lateral anastomosis, closing the wound up this time with the heaviest chromic gut I could get and doubled it, feeling sure that if he developed another bronchitis or pneumonia I should be able to hold it and that fortunately proved to be the case. He went on very well, the wound healed almost *per primam* and he made an almost uninterrupted recovery.

## Perforation of Duodenal Ulcer. Operation. Patient.

*W. H. Rankin, M.D.*

The next case that I wish to present is that of a man forty-seven years of age, not of very robust physique. His top weight in his most vigorous day was 145. He had been suffering from symptoms referable to the stomach for some ten years, during which time he had had intervals of weeks, perhaps one or two months, when he was free from any distress in the gastric region. He was at all times able to take food without a very great discrimination in his selection. Eighteen months ago he was seized with a very severe hemorrhage, which continued for thirty-six or forty-eight hours and he lost a very great deal of blood. However, after being confined to his home for two or three weeks he regained his strength sufficiently to be able to return to his work as a carpenter. During this last eighteen months he had been going on pretty much the same as in the previous ten years until April 11th. On the afternoon of April 11th, he stopped work at half past four and running up the elevated stairs to catch a train "something happened." He was seized with very sharp pain in the abdomen and a desire to vomit. However, he controlled this until he reached his home and then, as the pain grew worse, the nausea and vomiting became persistent for a time and he sent for his physician. His physician returned to him at midnight and found him growing steadily worse and sent him to the hospital. He entered St. John's, April 11th, and I saw him in an hour or two afterwards with every symptom of a perforation of a gastric ulcer. The abdomen was opened (and a very markedly rigid abdomen it was) and found to contain some food contents of the stomach and a good deal of pus. The pylorus was pulled up and we found a perforation on the pyloric side of the ring perhaps one-half inch in diameter. This was incised and closed with catgut sutures and afterwards buried with some of the gastrohepatic omentum and a posterior gastro-enterostomy was done. There was one thing which was just a little irregular. One of the layers of the mesocolon had fused with the posterior wall of the stomach in the gastrointestinal tract and it was rather difficult to bring the stomach through the mesocolon without dissecting it pretty thoroughly on either side at the point where we want to make the anastomosis. The gastro-enterostomy was done. the man was returned to bed and he thereafter went on very comfortably and has already gained, I think, ten to fifteen pounds in weight and seems to be perfectly well.

I should have said in the second case that, of course, the abdominal cavity was sponged clean down along the ascending colon and into the pelvis, and a stab wound made in the lower abdomen and drainage put in there. Drainage thereafter was largely from the lower wound. The drainage was quite free for a few days from the stab wound, but he did very well.

## Hepatoptosis with Torsion of Ligaments Simulating Gall-Stone Colic. Operation. Patient.

*F. E. Brown, M.D.*

Patient twenty-four years of age, whose present history was negative up to four years before trouble led to operation. The patient began to complain of a distress in the epigastrium after the heavier meals of the day. As time went on this became more and more acute and coupled with the distress was a definite pain over the general region of the liver. This fullness or distress, as she termed it, started about half hour after meals and lasted for about one hour, was relieved by belching. The patient at times was incapacitated from work.

About a year ago the pains became severe, lasting from five to thirty minutes, located over the region of the liver, radiating to the back and at times into the scapular region, being brought on more particularly after the heavy meal. Patient was constipated during this period, cathartics causing same severe pain.

About a year before operation attacks of pain lasted from some hours to a day, and patient was incapacitated from work for periods of from one to three days.

I saw her one evening after one of these attacks (the most severe) had started. She had been in pain about a half hour, was writhing in bed, the pain simulating that of a calculus colic or perforated viscus.

Examination showed a rigid abdomen, the rigidity due to pain, most marked over the upper quadrant, the pain being over the general region of the liver.

The diagnosis at that time lay between a stone in the common duct and a calculus of the kidney or a perforation of the duodenum.

Not knowing definitely whether there was a viscus involved, no morphia was given for some time, until the absence of peritoneal symptoms allowed the giving her a quarter grain. There was, however, very little relief from this.

It was about twelve hours after the beginning of the acute attack that the patient consented to go to the hospital. During the trip across the city the pain was noticeably better and on reaching the hospital it was practically absent. I saw her a few hours after admission. The pain was not marked. The patient had been partly relieved, but there was definite tenderness over gall bladder region. The liver seemed to be enlarged.

Gastric analyses were made with negative results. The urine was negative and fecal examination was negative for blood. An exploratory laparotomy was done (right rectus incision) and the lower border of the liver was at least two fingers' breadth below the level of the umbilicus, turned upon itself and presented in vertical rather than a horizontal direction. Further exposure of the wound showed that there was a prolapse of the liver with torsion which caused a definite twisting of the ducts of the liver with partial occlusion. The stomach, pylorus and doudenum were negative. The gall bladder normal. There were no stones. A small slightly thickened appendix was found and removed. Some little time was spent in trying to get the liver up in place and anchor it. Finally, a plication of the suspensory ligaments was done, holding the liver somewhat in position, but allowing still some rotation on its axis. Then five or six chromic gut sutures were placed through the anterior border of the liver, attaching it to the anterior parietal peritoneum, and these seemed to hold the organ in place.

Her after history was uneventful. After being out of bed about two weeks the pain or dragging sensation which had been complained of for the few days previous in the right side had practically disappeared.

When she started to go back to work the advisability of some support was considered, but by wearing a straight-front corset definite relief was obtained even when standing for some hours. The only thing necessary was to tightly close the portion of the corset below the level of the umbilicus, leaving the upper part free.

It is now four months since the operation. She has been perfectly well and has gained in weight and has been able to eat things she had not been able to eat for years. Apparently the thing that has cured her has been not lifting up the liver, but tacking it in such a position as to prevent twisting of the bile ducts, this twisting causing partial or complete occlusion and the severe pain from which she suffered.

### Cystic Degeneration of Breast with Colored Discharge from Nipple.

*F. E. Brown, M.D.*

The second case is one of cystic degeneration of the breast with colored discharge from nipple. The patient was a woman of fifty-eight years whose past history, while containing various illnesses, had no bearing upon the present complaint.

She was the mother of four children and had never suffered from any trouble with the breasts. About a year before I saw her she noticed at times a blackish discharge upon her undervest and wondered whether it might not be due to careless washing. Some three or four months later she discovered a slight blackish crust upon one of the nipples. Further investigation showed that upon pressure this discharge could be expressed from the border of the nipple.

When I saw her (about three months before operation) there was no mass in the breast, no axillary involvement. A slight discharge could be expressed from the nipple when the nipple was lifted and rubbed between the fingers. This discharge was of a peculiar nature, showing globules of oil, mixed with an inkish or blackish discharge in small flakes. At times this would not be present. I saw her three or four times before I was able to discover any appreciable amount of discoloration in this oily discharge. Her history was that once or twice there had been a reddish or a purplish discharge, but in general the discharge had been black.

The diagnosis was distinctly in doubt. It lay between a neoplastic condition of the milk ducts entering the nipple and a fungus. There was no excoriation of the nipple itself. Several text books had mentioned various orifices in the body which may be invaded by fungi and in one was found a reference to a blackish discharge which had been noted.

The patient consented to have radical interference and the breast was removed. Cross-section of the breast showed a degeneration or cystic condition of the nipple proper. I have the pathological report here and will give a brief résumé:

"*Tissue Examination.*—Breast, six cultures from various parts of the breast on different media were all sterile. Grossly, the ducts and secreting tubules of the breast showed cystic dilatation and on section a blackish fluid, resembling bile, exuded.

"Microscopic examination showed a cystic condition of most of the tubules which were filled with degenerated epithelial cells and the walls of the tubules stained a blackish color by the discharge. These tubules or small cysts were gathered in groups separated by areas of fibrous tissue showing chronic inflammation, and in the absence of a bacterial cause I am inclined to think the process began as a chronic inflammation with production of fibrous tissue, which in turn obstructed the ducts and cut off groups of secreting tubules leading to a degeneration of their lining epithelium. The fluid expressed from the breast was quite oily. A stained smear of the fluid itself showed a large number of fat globules and some broken-down cells. There were no bacteria present."

The pathologist goes on to say that he is unable from any bacteriological examination to state the exact nature of the blackish discharge.

I forgot to mention the fact that the preliminary treatment in this case had been an antiseptic one, the use of alcohol as a wash three or four times a day and the use of a salicylic acid dusting powder. Personally, I felt that it was a fungus growth that had invaded the structure of the nipple and that the use of these antiseptics had destroyed it so that there was no growth upon the media. However, that is not a diagnosis. It is simply a possible guess.

It is now a year since operation and the patient's history has been absolutely negative. No secondary growths of any kind have arisen. I would be glad to have any one throw any light upon this case.

## Rupture of the Lung Without Fracture of Ribs.

*W. S. Simmons, M.D.*

The first case I have to report is that of a boy eleven years of age who was skating on Bedford Avenue when, unfortunately, a Yellow taxicab ran over the boy. On entering the Swedish Hospital there were some contusions over the upper part of the right abdomen and left side of the chest. The boy was in a profound state of shock, although he had a temperature of 101½; pulse, 120, and respirations, 40.

The interesting thing about this to me was the queerness of the physical signs in the case. The right side of his chest was hyper-resonant, but not markedly so. The respiratory sounds were increased in volume. The voice sounds were increased in volume. There was no dulness in the upper portion of the chest at all. On the left side (I would say also that the respiratory excursions on the right side were very markedly increased) the respiratory motion was entirely absent. There was hyper-resonance all over the chest, absence of voice, absence of breath sounds and there was no vocal fremitus present anywhere on the left side of the chest. The boy while in the hospital (in fact, while being examined) vomited some blood. It was quite evident from the condition of his abdomen that there was no rigidity whatsoever. As there was not much the matter with him it was thought best to leave the youngster alone. A diagnosis of rupture of the lung was made in this case. The heart was pushed completely over to the right of the sternum. The youngster lived only a few hours and an autopsy was made by Dr. Wuest, who said that from his findings it was the first case he had ever seen in his life where the lung had been ruptured without a fracture of the rib. No ribs were broken anywhere.

## Perinephritic Abscess Simulating Appendicitis.

*W. S. Simmons, M.D.*

The next case is that of a perinepritic abscess with possible catarrhal appendicitis. The patient was a young man, twenty-eight years old, a lawyer, born in this country. He came to my office one night, complaining of severe pain in the lower part of the right side of the abdomen. He said it was worse on straightening up and that he had had it for two or three days. There was no temperature, the pulse was apparently normal and I gave him something and told him to come back. Instead, he went out of the city and I din't see him until two weeks later, when he came into the office again complaining of the pain being much more severe and he looked very ill indeed. He had a temperature at that time (two weeks after the initial condition) of 102; pulse, 110; respirations, 25. The lower right quadrant of his abdomen was tender. He had vomited. The extreme pain and tenderness, however, was, I think, about one-half inch above the line between the umbilicus and anterior-superior spine.

It seemed quite evident that he had a condition of the appendix and was told to go to the hospital. He went there immediately and on admission there examination of the blood revealed 23,600 leukocytes, polymorphonuclears, 83 per cent. Examination of the urine was negative. He had perfectly normal urine.

The abdomen was opened the next morning and an incision of the regular kind was made for an appendix. The appendix was found and didn't appear to have anything much out of the way with it, but it was removed, for I remember distinctly a case some years ago where there was a leukocytosis and a polymorphonuclear count and the appendix was apparently normal, but when removed and sectioned there were two or three foci of pus in the muscular wall of the appendix. There didn't seem to be enough trouble in this case around the appendix to warrant the leukocyte count of 23,000 and polymorphonuclear count of 83 per cent, and the wound was enlarged upwards quite extensively. The gall bladder was examined and found to be normal. There was nothing wrong to be seen in the liver. There was no evidence of gallstones. The stomach was examined and found to be normal. The right kidney seemed to be markedly enlarged, especially downward. There was a mass in the lower pole of the kidney which was somewhat merged with it and gave a slight sensation of fluctuation. I put an aspirating needle in and got it out full of pus. The mass was incised and drained and there was no particular trouble with the patient after that and recovery was uninterrupted, but the thing which interested me in this case was the symptoms of appendicitis; yet there was nothing in his history, the urine or anywhere, that would lead us to suspect any condition without the appendix.

### Abscess of Lung. Case Report. History and Patient.

*J. M. Scannell, M.D.*

Male, age thirty-three; married, occupation, lawyer.

*Family History.*—Father died at age of fifty-eight years, "myocarditis"; mother alive and well, age sixty-four years; one brother and three sisters alive and well.

*Past History.*—Measles and whooping cough at the age of seven—recovered perfectly. At the age of fifteen years suffered from malaria four months, recovered and has not been troubled since; appetite, good; bowels, regular.

*Present History.*—On August 12, 1911, began to feel heavy, dull and tired, three days later (August 15th) took a hot bath, quinine and whiskey and went to bed; next morning felt a sharp pain in left side of chest low down in axillary line, which was increased on deep inspiration. Sent for family physician who pronounced condition pleurisy. At this time began to have a slight cough. Pain in side increased and on third day following morphine had to be given for relief. Abdomen became distended and bowels would not move until severe cathartics were given; these were effctual on the fifth day, when patient had several movements, which were followed by exhaustion.

About this time he began to expectorate a bloody mucus and his physician pronounced the condition "pleural-pneumonia." From this time on suffered from severe sweating necessitating change of bed clothing twice daily.

On the tenth day expectoration began to increase in amount and odor became offensive, had severe frequent coughing spells. Family physician called in a consultant who pronounced case one of broncho-pneumonia. On the fifteenth day chest was aspirated twice, first time was negative and second time about two drams of a blood stained serum obtained. From twentieth to thirtieth day pulse and temperature gradually got better and on thirtieth day was normal.

At this time another medical consultant was called to determine whether or not an operation was necessary as patient was expectorating a large amount of sputum with a very foul odor. It was decided on account of his good condition that it was better to wait with the hope that the condition would get better without operating.

Patient went to St. Joseph's, New York, on the thirty-fourth day, and felt much better for the first four days, then cough increased, felt weak and was again taken to bed. Sent for a doctor who told him he ought to be operated on as soon as possible, as he was suffering from empyema.

Following day came back to Brooklyn again and sent for his family physician who recommended an immediate operation.

Was taken to St. Catherine's Hospital that afternoon, October 7th, fifty-two days after onset of desease, where I saw him for the first time and his general condition presented the following picture:

Appeared very tired and weak.

*Body.*—Fairly well nourished.

*Eyes.*—Normal to light and accommodation.

*Tongue.*—Moderately coated.

*Heart.*—Sounds goods and regular—no murmurs.

*Arteries.*—Walls normal; pressure systolic, 110; diastolic, 95.

*Lungs.*—Right, normal; left, few large coarse rales heard over lower lobe, most distinct behind, between fourth and eighth ribs; on percussion slight dullness was noticed over this area.

*Abdomen.*—Slight distension—soft.

*Extremities.*—Normal.

Pulse, 100; respiration, 20; temperature, 99 2/5.

I advised patient that I did not think it was necessary to operate on him immediately, but to wait four or five days until a more accurate diagnosis could be made, and this he consented to.

Inhalations of equal parts of chloroform, alcohol and creosote were given every three hours, and this seemed to give him some relief.

Sputum was sent to the laboratory every morning for five days and examined for tubercular bacilli—all these were negative.

*Urine.*—Clear, 1,020, acid, albumen and sugar negative.

*Blood.*—Red blood cells, 4,200,000; white cells, 14,000; h., 85 per cent; polymorphonuclears, 70 per cent.

On second day after admission chest was X-rayed by Dr. Williams, and this showed a round shadow three inches in diameter between the fourth and eighth ribs behind.

Two days later I aspirated chest from behind, inserting needle between the seventh and eighth ribs, and pointing it forward and upward toward left clavicle; when point was in a distance of four inches I got a flow of thick pus with a foul odor; about three ounces were withdrawn.

A diagnosis of gangrene and abscess of lung was made, thus being due in all probability to a lobar pneumonia.

Patient was advised to be operated on; this was consented to and performed three days later (seven days after admission).

*Operation.*—Anaesthetic, cloroform. Patient placed on his right side and a curved incision made around lower end of scapula. Left shoulder pushed forward to carry scapula out of the way as much as possible; dissections carried down through muscles to seventh and eighth ribs. Periostium incised and two inches of each rib removed. Both layers of pleura were held together by means of a continuous lock-stitch of plain catgut, starting one-quarter inch from the anterior cut end of the eighth rib and going all around the field to the starting point.

An aspirating needle was then inserted for a depth of three inches, but no pus was obtained, it was withdrawn and inserted again pointing it higher; pus was found. The needle was left in and a sharp-pointed scissors inserted along its course, opened about one inch and withdrawn; a flow of pus and blood was obtained.

A double rubber drainage tube six inches long was inserted into the opening made by the scissors, after this was in place very strong pulsations, synchronous with the heart-beat, were transmitted through it and I thought that the end must of been resting against the left ventricle or left pulmonary artery. Tube was withdrawn one inch and pulsations stopped, it was then held in place by a stitch of silk-worm gut.

Skin was sutured, wound dressed and patient put back to bed.

*Before Operation.*—Pulse, 88; respiration, 24; temperature, 98⅕.

*After Operation.*—Pulse, 88; respiration, 20; temperature, 99.

*Post-Operative History.*—Following two days after operation patient expectorated moderate amount of pus and blood. Wound discharged considerable amount of pus streaked with blood.

Blood in sputum and from wound disappeared at the end of third day. Coughed and expectorated very little after the seventh day.

Discharge from wound gradually got less, patient began to feel stronger; gained weight, and left hospital on twenty-eighth day.

Pulse, 88; temperature, 98; respiration, 22. Wound was not entirely healed on leaving hospital, but was completely healed twelve days later, which was November 16, 1911. From this time up to present has enjoyed excellent health and gained about forty-five pounds.

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# SOME OF THE RELATIONS OF THE PROFESSION OF MEDICINE TO THE MUNICIPAL GOVERNMENT.*

**Hon. George McAneny,**
President of the Board of Aldermen.
New York City.

FOR me to talk to you about anything that has to do with the technical side of your own work seems a rather daring venture. We gain advice and guidance from you and we are not often invited to tell you what you should do in return. I do not propose to attempt to do that; in fact, what I shall have to say to you will be more in the nature of a report of some of the things that the City Government is doing with your aid and under your guidance.

The relationship of your profession to City Government is constant at every point in our work and it is peculiar, of course. There are, for instance, 7,200 physicians in New York City in the Medical Directory and I believe that the estimate of all is 8,100. We have in the city service 1,632 of the 8,100; in other words, 20 per cent. Of course, a large proportion of these are unpaid, but we do spend about a million dollars a year in the salaries paid to physicians in public service in the City of New York. That in itself shows how far the advance has gone in bringing the practice of medicine into our social system in cities, if I may so term it. There are those, of course, too, who proclaim that there will be a complete socialization of medicine in the not-distant future. That, at least, there will be continued advance no one can deny. Dr. Goldwater has even suggested that the present administration should not hesitate to provide for the periodical examination of all those citizens who will submit to it and a great many, perhaps, who would not submit willingly. That has been a suggestion only. It has not been pressed very far, but it indicates, nevertheless, the direction of thought among medical men in the service of the city upon this subject.

Of course, our assumption of medical work has not been a very old affair as far as establishment goes. It has not been a great while since the Board of Health found itself centered in a bureau of the Police Department with about $250,000.00 a year as its budget account. Today it is a great, strong, constructive department standing on its own basis and costing us nearly $4,000,000.00 a year. The difference has been, instead of treating the Department of Health as a sort of watchdog to give the alarm when epidemics seem imminent, or when the general or local sanitary conditions are bad—instead of treating it as that sort of thing, we have turned it loose upon the preventive side of medicine and of sanitary work within the city, and almost all of the huge sum that I have already mentioned is spent today upon preventive work.

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* An address before the Medical Society of the County of Kings, Feb. 16, 1915.

If you take out the contagious diseases hospitals, which, of course, would have to be supported whether they were called a part of the system of the Board of Health or not, there is still two and a half millions of dollars spent upon preventive health work, and if you assess that upon our great population, it turns out that it costs 41 cents for each one.

Of course, it isn't merely in our Health Department that the city's health work is conducted or its medical advisers and employees find their opportunity. There is that claim of what we have come to call the Social Service Department, the Department of Charities with its hospitals and its homes and its relief work and its socialization work generally, and there is the Department of Correction, so much of the duties of which have to do with physical and not merely moral correction. There is the Department of Tenements and the recreational work that has grown so much of late, and so on; so those are all closely allied and they all have to do, of course, with the one great subject of the city's handling of its own health problems.

We don't get along with perfect smoothness at the City Hall in promoting these things and building up this system. We have found ourselves torn between two schools of thought in the community. There are those who believe that we ought not go quite as far as we do. They call us maternalistic and socialistic now and then. They say that City Government is not meant for such things as these and that we should cut down on these sort of undertakings. Then there are those who tell us that we don't go far enough; that we ought to spend more upon our hospitals and sanitariums, upon our recreations, our public baths and all the rest and more upon those and then still go further in assuming the relief of such distressing conditions as, for instance, we are facing this winter in the matter of unemployment.

As I say, we are torn between the two. We try to take the middle ground between the two. It is our conviction that the middle ground is the firmest and the safest for the present and, for that matter, it is about as far as we can go under the present legal and financial equipment that is given us.

I want to talk a little about the effect of this kind of work on the health of the city and the work that so many of your profession are doing for us and with us and those who are allied with us, and perhaps it is not an inopportune time to warn you that these things have got to be protected, as even now there is a certain cry abroad through the town that we have not only gone too far, but that some of these activities should be cut out.

Let us take account of the facts as we go along and be prepared to enter the debate.

If I were to speak for a moment of the corrective side of the work which we are carrying on it would be merely to recapitulate what we know about the growth of our hospital system in the improvement of our hospital methods. You know if you take the average census of all the hospitals of the city in the past ten or fifteen years that the total of growth is found in the city hospitals. Private hospitals, as far as the census goes, stand about as they are from year to year.

The growth is in the city service, but that growth, great as it is, has been, on the whole, rather intelligently directed.

We have rather a curious jumble of situations today. If you go to Blackwell's Island, which I did about two o'clock one morning last summer, stepping across the crowded and prostrate forms found in the hallways of the Metropolitan Hospital, finding conditions of crowding that were pretty shameful, and then turn to Staten Island and find at Sea View the magnificent monument costing the city about four and a half millions of dollars for a hospital at $405,000 a bed, you would rather be inclined to agree with me that we haven't proceeded with great consistency and that we haven't made the most of our allowance, but we are not doing that sort of thing any more. There is a present project to double the capacity of Sea View, bringing it from 1,000 to 2,000 beds, at a further net outlay of only $700,000. The difference would be that the patients are to be cared for in shacks at Sea View, as they ought to be, instead of maintaining a costly series of buildings such as we have there.

We are putting more common sense into our plans for the building of hospitals and, I assure you, in our plans for the conducting of them.

We have made great and substantial progress in the development of our ambulance service.

We are going far in the better regulation of nursing, and, by the way, when I spoke of 20 per cent of the medical profession being in the city service, don't forget, too, that we have a pretty large proportion of the nurses of the city and of those other allies of the medical craft, strictly speaking, that we meet from day to day.

We commit to private hospitals many patients during the year at city expense, those dependants of the city that either cannot be cared for in our up-to-the-present-time rather crowded places, or who can be cared for rather more satisfactorily in private hospitals.

Upon hospitals and other institutions of this character, in fact, we are spending in our budget a little more than five millions of dollars a year, but upon per capita allowance, of course, for the support of our charges that are assumed by the private institutions.

We are spending ten millions of dollars a year upon these branches of our corrective, social and medical work. Of course, now that in common with the new direction that has been given to medical science itself, we are putting it on much more heavily on the preventive side, and I suppose as time passes the balance will sway toward the other direction. For that matter, if we had started ten or twenty or thirty years ago, if it had been possible to start with all the enlightenment that we have today, upon a preventive course, I presume we would be spending much less than we are today.

Upon the preventive side what was at the beginning chiefly a sanitary inspection service, has broadened until today the Department of Health has its great Bureau of Child Hygiene, costing $600,000 a year, its Bureau of Infectious Diseases with its extremely efficient fight against the great "White Plague" with that which its private allies have been carrying on, and its laboratory work; and I suppose it might rightly be claimed that the public laboratories of New York today are not surpassed by any in the world; the Tenement House laws resulting in better living conditions for the people; the factory laws with resulting better working conditions for a great proportion of the population; the better methods of street cleaning and of sewerage;

and, finally, the much better opportunities offered for public recreation.

All of these things come within the preventive side.

What has interested me, perhaps, more—and I have had the honor to serve as Chairman of the Board of Estimate of the Committee on Social Welfare in the last five years—what I find the greatest satisfaction in today, has been to develop the Bureau of Child Hygiene, taking hold of the babies first and running up through the children in the schools and so on.

When it was demonstrated, for instance, through private means, that the establishment of milk stations for the pasteurization and sale of milk at cost and the instruction of mothers who might come with their infants—when it was shown that that was a lively and satisfactory method of saving lives, the city was urged to take over those milk stations. I recommended the taking over of 50 of them. I found, however, that I had an uphill fight on my hands, but by hard work, I finally succeeded in getting the city to take over 15 of the milk stations. Then private individuals, like Mrs. Harriman and Mr. Strauss, said, "We will raise enough money to add 40 to your 15. We will raise $40,000." They raised $80,000. We left it to them to work the thing out. Of the 55 stations that we had we put two in one selected district in the slum parts of the town; in another district none; in the next two; the next none and so on. Then, after that cruelly hot summer of 1911 they came to us with the results. They had taken from the vital statistics of the Board of Health as affecting those districts, the baby deaths during the summer as compared with the year before. In each square where two stations had been put there was a black dot for each death. In these squares with the stations they had gone down, leaving a wide margin for the next one to be filled up, or, perhaps, one or two. Every one was blocked down in a sort of checker-board arrangement. In the next that wide margin again and so on, district by district. The total lives indicated as having been saved in this way through those stations alone, was something between 1,200 and 1,300 for that one summer. Of course, multiplying this and applying it broadly to the city, the figures were bound to grow in our imagination, and when we reflected not merely that these infants' lives had been saved, but many others that would have dropped off in the third and fourth year, because of the proper basis given them at the start, we readily added the complete list to the budget for the year following, and I have been able to add in a few more for each year since. I hope they will be placed everywhere where there is need for them.

Coming up into the school work where we have so many doctors and nurses, chiefly the younger men, we found that but a partial plan had been carried out. There were not enough workers. We found that the parochial schools had been omitted. There was a plea to have appropriate expansion and we doubled the allowance made in a single year for this work. The result was that the parochial schools were brought in. That much better basis was fruitful of much more satisfactory and better results by reason of establishing further lines of access to these particular children.

We even added dental clinics and I recollect that when the budget went to the Board of Aldermen the matter of the clinics attracted particular attention, and I was attacked with a good deal of vigor. I was accused of attempting to provide for favorite dentists who would endeavor, in turn, to treat favorite patients, and it was all to be under some fusion district leadership. The result of this agitation was that they cut them out. Next year I got them back again and there they are now and examination of the teeth continues side by side with the general medical examination.

What has been accomplished with the use of this uniquely promising field of preventive work? There are 700,000 children in the city. It can only be estimated. We know the result has been very great.

The tuberculosis campaign has been carried on through circulars dropped in letter-boxes throughout the different parts of the town by twenty-six different nurses. There has been almost house-to-house instruction through the medium of visiting nurses.

When we send people out of Bellevue now we send a social nurse after them. That is another innovation which came very hard with me in the Board of Aldermen, but a beginning has been made there, too; so the convalescent who goes away is not necessarily returned in a week or ten days, to be returned again later because the instruction of the doctor has been disregarded on reaching home.

I feel a certain satisfaction in being able to report to you that the city is acting along these lines and is making so much headway. We have been accused of going too far with these things and in the five years that I have been at the City Hall we have made provision for only one interior bath, that at Brownsville, which the people paid for on the co-operative plan. We have spent less than those preceding us, but we have done, perhaps, a great deal in developing the plans. I found only one swimming pool and one gymnasium in the nine baths that we have. I got money enough to equip five with tanks and five with gymnasiums. They are civic centers for the districts in which they are situated and each one is used by thousands of people. Twenty-five or twenty-six local organizations have grown out of the one located in Greenwich Village.

What is the result of all this?

Of course, we all appreciate in the City Government, as well as you, that the falling death rate is due, perhaps, chiefly to the advance in medical science, but we must also admit that we certainly cheerfully claim that a great deal of it is due to the advance in the municipal methods which I have been talking about.

In 1866, three years before the organization of the Metropolitan Board of Health, the death rate was 35 in a thousand. In 1898 it was 20.2 per thousand, which was practically the same as in 1904. In 1909 it was 16. In 1913 it was 13.7 and in 1914 it was 13.3, and it is still going down.

Upon the assumption that for every death there are at least 10 cases of serious illness in medical practice, we may say that had the death rate of 1880 prevailed last year instead of the death rate of 1914, we should, at the present time, have 71,000 more deaths per annum than we did have, and, in addition, 700,000 more cases of serious illness.

For its share in all this credit may be given to the City Government. So much the better for City Government. It does speak for the new methods and new ways, and when people talk to me about municipal economy and want to cut out this kind of work, it seems to me that they challenge the best municipal economy of all, that economy of human health and human happiness and human comfort that ought to be put right to the front in any program that the City

Government has to carry out. We have taken that attitude and we are going to continue to stick to that attitude.

If I might mention a few changes that have occurred in particular it would be to give you the death rates in different years in certain diseases:

In diphtheria in 1868-1877, the deaths were 154 in each 100,000 of our population. In the next decade, ending in 1877, it was 170 (it went up). In 1897 it was 130; 1907 it was 53 and in 1913 it was 32 (reduction of 80 per cent).

Malaria, 1868-1877, 26 in each 100,000; in 1908, 13.7 in each 100,000.

Scarlet fever, going back to that decade right after the war, 1868-1877, 91 in each 100,000; 1908-1912, 18.

The total of all pulmonary consumption, from 1887-1902 (15 years) fell 40 per cent.

Small pox, 1874-1883 (that decade), 247 in each 100,000; 1900-1910, less than 1 in each 100,000.

Cholera, of course, has long been put aside, but not so long, perhaps, for from 1860-1870, there were 1,304 deaths in New York City; that is 10 years. In the 40 years from 1870-1910, there were 25 deaths.

Typhus, in the 20 years from 1862-1882, 3,281 deaths; from 1882-1902, 395 deaths in the 20 years; in the 10 years from 1902-1912, none.

Typhoid (which is still with us), 1868-1877, 31 in each 100,000; 1878-1887, 28; 1898-1907, 18; 1908-1912, 11 (a reduction of 65 per cent), and, still, of course, as you well know, going down.

Perhaps the most striking of all are the figures of infant mortality. In 1898 (only 16 years ago) there were 212 in each thousand that died under one year. In 1904, 162. In 1909, 129. In 1913, 101.9. In 1914 it dropped below the 100 mark.

These are the things, of course, which make up the physical health of the city as a community and as a people. They have not been secured through passes of the hand, but have been secured through the hardest kind of work on the part of great departments and individuals, but chiefly, of course, through the work of the men and women in the medical profession. How much we owe you it would be difficult to tell you. We do not attempt to tell you, but what we should do without you we do not know.

There is another phase of the question which I presume is more interesting to you than to us. What is the effect of this upon physicians and upon their average incomes? The proportion of physicians coming into the field is decreasing slowly, but quite surely. I understand that the action of the American Medical Association not a great while ago in co-operation with those teaching medicine in raising the standards has cut down considerably the annual quota of graduates from the medical schools of the country, but however it may be, we find that here in New York in 1900, there was one physician to each 634 of the population. In 1914 it had fallen to one in each 688, not a great difference, but still a decline however. The point is, however, as you also well know, that while there must of necessity be fewer calls for the cure and treatment of disease, the opportunities opening up on the preventive side are great as well as on the other side of the scale.

I read with a great deal of interest a paper presented to the International Congress at London two years ago by John Burns, then in the Cabinet, in which he showed, through the assistance of those favored by the British Government, a greater amount of employment given to physicians in examinations on account of the insurance acts, and that the average income of the British surgeon or physician had been increased something like 50-60 per cent during the period of activities. The death rate was down, too. Depression and sickness also were very very less shortened as a result of the work done on the preventive side and that is where we hope to continue as a government to meet you and to give you your own tools and your own machinery and your own opportunity.

We have some pretty tough problems facing this community. There are nearly six millions of us and if we take in the two counties over in Jersey, which are separated merely by the accident of a river and really belong to the metropolitan district, we have over seven millions of people, and, judging by the radial line that would correspond to the radial line of London, we are today the greatest zone of population in the world. We are the greatest city in the world, not merely in men and women and children, but in our health and promise and many other respects. We are going far in making our greatness also take up the matter of living and working conditions in the matter of our people, but we are still away behind some of the old-world cities and away behind some of our own. It is a slow task comforting so many people who are taxpayers, most of them, in either direct or indirect ways and who don't like to give up a penny for something they feel is going to somebody else. We have got to insist upon it. We are losing this winter, through death and disease, a great many more than we ought because of the social and industrial conditions prevailing. The death rate I read has gone up a little since the first of January—gone up quite perceptibly. I think it is fair to assume that that is because there are so many people out of work, so many people near to starvation. We have been appealed to to take hold of this matter as a city problem financially as well as socially. We have been obliged to plead the fact that we have no money to establish a relief or pension system for those who cannot find work and we are not permitted to go outside the confines of the City Charter. In short, we have been obliged to explain that we cannot solve through City Government these great industrial and social problems. Dr. Warbasse spoke about certain irregularities in our economical and social conditions. They are worse than that. When there is a prevalence of trouble and poverty and hard times and want following this great war, for instance, there will be found a certain number of men and women who shall throw their proportion of income absolutely off the cliffs to destruction, and just so long as the city is willing to save some through the sacrifice of many another in these ways, just so long are we going to have troubles like these.

It has been suggested to us by Dr. Howe with his great, big, noble heart, when he came to us the other day, that the city should find a way to take care of these conditions; that we must get up some sort of a pension relief, temporary though it may be. I was bound to ask him whether he had reflected on the fact that this is not a city problem, but a national problem.

In this particular winter of 1915 our problems of health and sanitation are complicated, made a little keener, perhaps a little more difficult because of unusual conditions like these; but next year we shall, I trust, continue to make headway and I trust we may be able to bring you from year to year a constantly improving report as to what we are enabled to do through you and through those allied with you. I congratulate you upon your part in a service like this. There is certainly nothing finer, nothing nobler; nothing calls for greater sacrifice among men and women in any profession. We feel it gratefully. We shall want not only your service, but also your advice. We want that at the City Hall and want it every day. These societies and individuals giving thought to these things who have advice to give us, notions through which we can improve our work—we want that advice sent right to the City Hall and I trust that you will believe that in the last five years we have shown that we are willing to act upon it when we do get it.

I thank you for the opportunity to come here to talk on such a dry subject, although it isn't always dry to those interested in it; but, nevertheless, dry it must be with such a talk, especially following so interesting a thing as I have seen upon the screen here. Bones, too, are dry, but City Government, gentlemen, is dryer.

DR. J. RICHARD KEVIN, in moving for a vote of thanks to Mr. McAneny for his address before the Society, said:

"It has been a great privilege to come here and listen to such a splendid talk on topics about which we ought to know and don't know. Many of us, I am sure, were interested to know for the first time in our lives that the city is employing about 20 per cent of our profession and that they are taking from the City Government a million dollars a year. I am glad to know that it is possible for a physician to be a millionaire, even though it takes 20 per cent of his profession.

"New York City, Mr. Chairman, has had many public servants, good, bad and indifferent. The one who presented himself to us tonight has had many difficulties to contend with. We have differed with him many times. The public, though, has invariably supported him in the end. Whenever we differed with Mr. McAneny we never differed on one point, sir, that behind his theory was an honest man; and it is with great pleasure, sir, that I move you a rising vote of thanks to Mr. McAneny."

This motion was regularly seconded and carried and a rising vote of thanks was accorded Mr. McAneny by the Society.

## THE POSSIBILITIES OF PREVENTIVE MEDICINE. WITH SPECIAL REFERENCE TO THE FUNCTIONS OF A PUBLIC HEALTH EDUCATOR.*

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THE awakening medical conscience of the land is being fast committed to the proposition that its scientific triumphs of today and of tomorrow are no longer to be measured by the faulty index of attempts at repair and reconstruction of degenerated and worn-out tissues, but by the saner and the broader basic principles of *prevention* and *prophylaxis*.

In the field of preventive medicine we are to look with anxious hope and expectancy for the solution of those vexatious problems and the conquest of that alarming death rate, which have made the

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[*] An abstract from the Author's Thesis on Chronic Degenerative Diseases—Their Heightened Mortality—and a Scheme for their Public Health Control.

names of chronic degenerative diseases the synonym of woe, disaster and defeat.

In this field—and in this alone—is opened an alluring vista studded with the hope and promise of notable achievement and bidding the scientist and the hygienist to explore its hidden treasures and possibilities if they would seek to enhance the glory and renown of an already honored, sacred and sublime profession.

The spirit and the teaching of the times tell us that, if kindred or wider successes are to follow in the years to come upon the proud accomplishments of a glorious, yet somewhat benighted past, these successes must be predicated upon a worship of "personal, civic, industrial and community hygiene, upon popular and scientific public health education, upon proper sanitary control, and upon systematic, thorough periodic examinations of the community," so that the ruthless hand of disease and death may be stayed ere its victim has been blighted.

We are on the threshold of an era of the "Socialization of Medicine" and empirical attempts in the hopeless stages are now in utter eclipse.

We shall lack the advantages which have come to public health work in the past in respect of the necessarily *notifiable* character of pestilential and communicable disease; we shall be burdened and handicapped by the difficulty of discovery of non-infectious ailments—we must find them without the clue.

But we shall be accomplishing wider and even greater things when in recognizing early, incipient signs of heretofore uniformly treacherous and fatal disease, we should succeed, through altered habit, environment, diet, hygiene, and improved health education in favorably and substantially impressing the grievous death rate of degenerative diseases, and postpone or defer untimely ends.

We would thus be contributing largely to the sum total of human happiness, content and life tenure or expectancy, which would mean so much lessened distress for the helpless, the widowed and the orphan.

To quote from remarks of mine addressed to the Queens-Nassau Medical Society in 1909:

"I trust I may be pardoned for referring to my identification with the Health Department of the City of New York to take occasion to remark the emphasis it has awakened in me of the importance and predominance of the value in our day of *sanitary science* and *preventive medicine*.

"In this realm, the ideals of the profession are being realized to their fullest, and there are perhaps few who would wish to differ with Osler when he says: 'Could Hippocrates meet again a class of students at some modern Cos and discuss the changes which twenty-five centuries had wrought, he would dwell upon this development of the science and of the art of *preventive medicine* as the crowning benefit which the profession has bestowed upon the race, and he would repeat those noble words which have found in this triumph their practical realization: "To serve the art of medicine as it should be served, one must love his fellow men."'"

The true physician—he who will live enshrined in the hearts of his countrymen while benevolence and conscience win acknowledgment, and sacrifice and heroism wring an erstwhile unwilling gratitude and praise—is to the manner *born,* and is not *made* by *scientific* equipment. The world will look in vain for many prototypes of the country doctor of the Ian MacLaren type in the commercial, money-mad, unsympathetic, callous surroundings toward which the future is threatening to bring us nearer and nearer.

If the reflections embraced in this preamble be taken as truths, it must be conceded that any acceptable and logical plan looking to desired results in a public health control of diseases important from a mortality standpoint must be founded upon *preventive* principles.

In approaching the subject we are confronted by possibilities, drawbacks, and limitations. These may be succinctly stated as follows:

Possibilities (a) The value of community examinations
(b) The aptitude for recognition of early signs
(c) The importance of sanitary control
(d) The domain of industrial betterment or mutuality
(e) The importance of social welfare, and interest in the employee.
Drawbacks (a) Lack of submission to physical examination
(b) Fear of betrayal of confidence on infirmities
(c) Fear of suspension or discharge if found defective
(d) Untoward effects on subjects, suspicious or apprehensive of unfavorable findings.
Limitations (a) Divided opinion of employers on the subject of offering industrial hygiene invitation to employees.
(b) Can a central bureau, e. g.,—a health department—absorb the right to practically class *all* diseases in a "notifiable" category?
(c) "Popular and Scientific Public Health Education, valuable as it is, will not alone suffice."

My plan of public health control would offer to embrace the following features:

(1) An intensive, constructive campaign of popular and scientific public health education embracing:
  (a) All proper methods of attracting the public's attention.
  (b) All proper methods of attracting co-operation of all bureaus of Health Department and all other City Departments with which we have anything in common.
  (c) Encouraging the co-operation of the medical profession, urging it to believe that Health Departments are their *allies* and not their *enemies*.
  (d) Teaching the latter that just compensation is equally due "the *adviser* who *protects* as the *practitioner* who attempts *control* or cure of *advanced conditions.*"
  (e) Teaching the public the importance and prudence of annual or semi-annual physical examination whilst in seeming health.
  (f) Conferences and co-operation with Employers' Life Insurance Societies and Life Extension Bureaus.
(2) Establishing the *whereabouts* of *all* diseases, duplicating in this way the enviable results obtained in infectious and notifiable diseases.
  (a) Through hospital and dispensary records.
  (b) Through consultation of prescription files of pharmacists.

(c) Through enforced notification, (if needs be), to a Health Department of *all* diseases.

(3) Offering systematic, periodic physical examinations by a trained medical corps to all

Industrial communities
Commercial "
Civic "
Athletic Associations
Fraternal Insurances

(4) By showing concern, in our control of *infectious* diseases, for the heart and kidney conditions of patients, as it is in this receptive period of childhood that serious conditions of heart and kidneys are engrafted.

(5) Proving by records and statistics preserved in large industrial plants that absences due to illnesses are being more and more controlled as physical examinations are being prosecuted, and references made where medical treatment is desirable and necessary.

(6) Preach "preferential reliance on the sphygmomanometer and blood-pressure findings to that of any other sign in aiding an early recognition of cardiac, vascular or renal disease."

(7) Adjust type and severity of work, and environment, in so far as is at all possible, to the vigor and physique of the individual.

(8) Teach the harmfulness of dietary indiscretions, the dangers of excesses of all kinds and the value and importance of careful, rigorous personal hygiene, including, and emphasizing, the hygiene of the mouth and the soundness of teeth.

(9) Urge the entire community to embrace the annual physical examination idea: "Do for the adult what has already been done for the child in the system of school inspection."

(10) Take steps "to see that the government—National, State or Municipal—looks after its employees from a physical and medical standpoint."

(11) Emphasize the importance of preventive medicine by having it widely taught in our colleges, and train men to excel in this new standard by which results are to be measured.

(12) Close guardianship over deleterious trades and "protection of the worker against his *fellow-worker.*"

(13) Go constantly armed with two slogans:
(a) " Public Health is Purchasable."
(b) Preventive Medicine can buy it.

The Department of Health is preparing to "blaze" the way to this hitherto unexplored field of prevention and early recognition of diseases. It is thus far being accepted, as all large untried plans are wont to be in their inception—with indifference and distrust.

The new province of the Public Health Educator will find untold obstacles to ideal results in the apathy and inertia of the community. He—more than many public health workers, sanitarians and hygienists—will need a store of patience and perseverance, will find much missionary educational work before him. Most of all will he need the confidence and the moral support of intelligent scientific workers, who are already "seeing the light."

By confidence and unremitting toil, by the support of Hygiene Advisory Boards and Boards of Sanitary Control, coupled with State

Labor Bureaus, he can reasonably expect to carry conviction to the most incredulous.

He will need perhaps more co-operation than any other Bureau head, for whilst others have separate and independent identities, his work will have something in common with all—to exploit their accomplishments and to suggest through the medium of an Advisory Board how the work of all is to be made more valuable *to*, and more recognized *by* the community.

He will find a fertile field for research in the possibilities awakened by "Pre-natal Study" in its control or influence upon the Albuminuria of pregnancy—the forerunner of many a case of chronic cardiac or nephritic disease.

He will have limitless opportunities for dilating upon the growing recognition of the supreme importance of blood-pressure findings in all that they mean, as reliable guides to early diagnoses and preventive measures.

He would have as an argument for "notifiable insistence" in *all* medical cases that the City could claim its right to them upon the ground that the needless and careless forfeiture of life because of neglect of ordinary personal or community hygiene, did much to augment the demands made upon its Charity Bureau for the maintenance of helpless and dependent families.

Furthermore, Health Departments come into the knowledge of the whereabouts of all diseases *after* death through the medium of death certificates. Why not, then, *before* death if the information can be made a source of public health value?

Armed with many modern advantages, which are so helpful, and the advanced thought which illuminates the present-day science of medicine, the enthusiastic worker may hope for brilliant results.

In striving after these, he will neglect none of the many aids which offer from every hand. His personal magnetism and worth may invoke, his enthusiasm and zeal may infect co-workers and enthusiasts, so that out of their combined efforts may come a wealth of knowledge and a heritage of scientific attainment, which may reflect credit upon his sponsor in the enterprise—the Department of Health of his City.

We are sanguine and hopeful of the results which must attach to the pursuit of educational work in health activities. We are certain that in the scientific era about to dawn upon a hopeful American people will be found results immeasurable, conquests amazing, and satisfaction supreme.

We know we shall glory in the knowledge that longer lives, happier lives and more useful lives are to be the legacy which the medical profession unselfishly bequeaths to a worshipful and, after all, a really grateful humanity.

## THE WAX-TIPPED FILIFORM BOUGIE IN THE DIAGNOSIS OF URETERAL CALCULUS.*

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PROBABLY the earliest reference to the use of wax as a diagnostic agent in urinary surgery is that cited by the erudite Gouley,[1] who mentioned that in 1551, Philippe, an itinerant Portuguese charlatan, was accustomed to employ wax instruments for the diagnosis and treatment of urethral "caruncles or carnosities." Somewhat similar instruments were later used for diagnostic purposes by Ducamp, Civiale and others.

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* From the Second Surgical Division of the German Hospital, Brooklyn-New York.

It is curious to note that wax was not used in the diagnosis of lithiasis until 1895, when Howard Kelly[2] suggested the employment of wax-tipped ureteral catheters in the diagnosis of calculus in the upper urinary tract of the female. In 1900, the same authority[3] published several cases demonstrating the value of the method, and in the following year wrote:[4] "There is no other means of ascertaining the presence of calculus in the urinary tract as direct as my method of passing a wax-tipped catheter up the ureter into the kidney."

In less skillful hands than those of Kelly and a few of his assistants, the introduction of the wax-tip was found difficult on account of the limitations of the straight speculum.

In 1908, Ayres[5] successfully employed the method in the male by means of one of the earlier models of Tilden Brown's direct vision cystoscope, but this instrument was also found to be ill-adapted for the purpose, because one could never be quite certain that a given abrasion of the wax was not acquired in passing the telescope through the sheath.

The technique which I[6] described in 1912 is simple, reliable and applicable to all male and female cases in which ureteral catheterization is possible.

We are now confronted with the question as to whether the method has any definite field of usefulness. The answer, I think, will depend upon the reliability of other diagnostic methods now employed.

Cole,[7] in 1907, remarked that any stone of sufficient size to justify operation might be shown by a röntgenogram which presented certain detail and that such detail might be obtained in ninety-five per cent of cases; while Pedersen,[8] three years later, made the following statement: "Cole presents plates to us time and again in which he has to admit doubt, especially when the stone is low down in the pelvis."

Fox[9] expressed the opinion that "since the widespread use of the Röntgen-rays, there is apt to be a tendency to pay too little attention to a careful clinical history and examination and to place all reliance on the X-ray . . . the skiagraphers . . . report most brilliant results, while . . . the surgeons are not quite so enthusiastic."

In 1909 Watson[10] made the following reference to the subject: "One other point . . . which I hoped might be brought forward in the discussion, is that of the liability to error, that occurs in radiography, which should always be borne in mind, more especially the liability to mistake the shadows made by phleboliths, endarteritis, fecal concretions in the appendix, etc., for caculi."

In the following year, Cabot and Dodd[11] called attention to certain limitations of röntgenographic diagnosis in stones of the pelvic ureter. In one of their case reports we find the following note: "Thus we have a calculus of fair size, of high density, studied with good technique by an expert and yet totally invisible." They concluded that stones in the pelvic ureter are best shown "by taking the plate with the tube placed over the region of the umbilicus and focused obliquely downward into the pelvis."

Bevan and Kretschmer,[12] in 1909 wrote: ". . . . it not infrequently happens that the röntgenogram fails to be of any aid whatsoever."

In 1910, Holland,[13] a distinguished British röntgenologist made the statement: "My percentage of correct diagnosis comes out over ninety-nine per cent," but followed it with the illuminating comment ". . . . We must all make occasional mistakes, *some of which will never be found out and so will not count against us.*"

It is quite true that about five years have elapsed since the observations of the above mentioned gentlemen were published. It is also true that during this period the general interest aroused in the various functional tests by the splendid work of Rowntree[14] and Geraghty, the almost routine use in all large clinics of the röntgenographic catheter and pyelogram for the determination of extraneous shadows, and the continued improvement in the apparatus and technique of röntgenography have no doubt reduced the percentage of error.

During the past few months however the following notes have appeared:

Moore [15] stated, "In three of the author's cases where ureteral calculi existed, the X-ray negatives were without indication of stone. The diagnosis is often difficult . . ."

Lower's [16] view may be summarized as follows: The interpretation of X-ray plates, where shadows in the course of the ureter simulate calculus, is a matter which should be referred to the expert. Conversely, certain calculi have not shown in X-ray plates taken by experts, but were later passed by the patient.

Braash [17] reported that, " . . . in the last one hundred cases operated on for renal lithiasis, stones were found in five cases where they were not shown previously in the radiogram."

Davis,[18] in June, 1914, made the following note in a case of calculous anuria occurring in his service in the Massachusetts General Hospital: "X-ray taken, negative for stone in kidneys, ureters, or bladder. . . . On the sixth day the patient passed twenty small stones, the largest of which was the size of a green pea."

Thomas [19] reported a case (that of Minnie S. #106) in which a patient seems to have been subjected to an unnecessary nephrotomy because of failure of the röntgenogram. Seven months later, a calculus was demonstrated and removed by ureterolithotomy.

Kelly[20] recently remarked, "numerous other phleboliths are grouped within two to two and one-half centimeters of the tip of the ischial spines . . . here occupying a position identical with many ureteral calculi."

Arcelin[21] and Beer[22] have shown that at least fifty per cent of vesical calculi escape röntgenographic demonstration, and the latter author further remarked, "How frequently similar stones escape the radiographic examination in the upper urinary tract. I would not venture to say, though such cases . . . are probably not so rare as most surgeons at the present day believe."

It is therefore apparent that a number of authorities confess, that with methods now generally employed, an as yet undetermined percentage of calculi, particularly those located at or below the pelvic brim, offer considerable diagnostic difficulty.

Most of us have been accustomed to rely chiefly upon the cystoscope, analysis of the separate urines, various functional tests, the röntgenographic catheter and pyelography in these doubtful cases; but I am convinced that in the case of ureteral calculi, these methods are all less direct and less likely to yield reliable evidence of either a positive or negative character, than exploration by means of the wax-tipped filiform bougie. The method has enabled me in fourteen cases to prove the existence of ureteral stones which had quite escaped the observation of careful and competent röntgenologists.

Regarding the statement of Cole, that stones of sufficient size to justify operation are demonstrable by röntgenography in ninety-five per cent of cases, it must be conceded, I think, that calculi, too small to be shown in a röntgenogram, may under certain conditions become impacted and remain "silent" for long periods. These calculi, the passage of which in the early period of their development might be greatly facilitated by methods which we have so successfully employed at the suggestion of Lewis,[23] Kolischer,[24] Buerger [25] and others, are not infrequently allowed to remain in the ureter until they become so large that ureterolithotomy may be required for their removal.

It is during this period, from the first colic to the final removal of the stone, that such cases, because of certain vague symptoms, are sometimes subjected to operation for the cure of alleged intra-abdominal conditions ranging from Lane's kink to cystic ovary.

In one of my cases an unfortunate lady who submitted without benefit to an ileo-sigmoidostomy for obstinate constipation with pain in the left lower quadrant, I found a calculus in the left pelvic ureter by means of the wax-tipped filiform. Several excellent röntgenograms were absolutely negative. The removal of this stone (a urate calculus weighing 0, 75 gramme) by means of the operative cystoscope, resulted in the complete subsidence of all symptoms including the constipation.

Let it not be thought that I regard the method as infallible, for I am well aware that owing to the presence of such conditions as a double or greatly dilated ureter, the tip may fail to come in contact with the stone. Two years ago, however, I expressed the opinion that, "A scratch is necessarily the best possible evidence of stone in the ureter or at the pelvo-ureteral junction," and gave it as my experience that a negative result had been equally reliable in excluding the possibility of calculus. I have as yet had no reason to modify this statement, and wish at this time to recommend the method for general use in all cases of *suspected* ureteral or renal lithiasis in which the röntgenogram is negative or presents shadows concerning the nature of which there can be the slightest doubt.

## REFERENCES.

1. Gouley (J. W. S.), *Surgery of Genito-Urinary Organs,* New York, 1907, 19.
2. Kelly (H. A.), *Medical News,* Philadelphia, Nov. 30, 1895, 593.
3. Kelly (H. A.), *Journal A. M. A.,* 1900, xxxiv, 515.
4. Kelly (H. A.), *American Journal of Obstetrics,* vol. 44; 441.
5. Ayres (W.), *American Journal of Surgery,* 1908, xxii, 330.
6. Harris (B.), *Surgery, Gynecology and Obstetrics,* December, 1912.
7. Cole (L. G.), *Jour. A. M. A.,* Sept. 28, 1907.
8. Pedersen (J.), *Trans. Amer. Assn. G.-U. Surgs.,* 1910.
9. Fox (C. M.), *Quarterly Bulletin N. W. U. Med. School,* September, 1909.
10. Watson (F. S.), *Trans. Amer. Assn. G.-U. Surgs.,* 1909.
11. Cabot (H.) and Dodd (W. J.), *Trans. Amer. Assn. G.-U. Surgeons,* 1910, 188.
12. Bevan (A. D.) and Kretschmer (H. L.), *Illinois Med. Journ.,* Nov., 1909, 520.
13. Holland (C. T.), *Archives of Röntgen-rays,* May, 1910, 393.
14. Rowntree (L. G.) and Geraghty (J. T.), *Journ. Pharm. & Expr. Therap.,* July, 1910.
15. Moore (H.), *Urologic & Cutaneous Review,* 1913, xvii, 635.
16. Lower (W.), *Cleveland Medical Journal,* 1913, xii, 260.

17. Braash (W. F.), *J. Lancet*, October 15, 1913.
18. Davis (L.), *Surg., Gyn. & Obstet.*, 1914, 677.
19. Thomas (B. A.), *Trans. Sect. G.-U. Dis. A.M.A.*, 1912, 42.
20. Kelly (H. A.), *O. D. Journ. of Med. & Surg.*, May, 1913.
21. Arcelin, *Cong. de l'ass franc. d'urol.*, Paris, 1913.
22. Beer (E.), *Journal of A.M.A.*, October 11, 1913.
23. Lewis (B.), *Trans. Amer. Urol. Assn.*, 1912, 169.
24. Kolischer (G.), *Trans. Amer. Urol. Assn.*, 1912, 217.
25. Buerger (L.), *Trans. Amer. Urol. Assn.*, 1913, 145.

# A CONTRIBUTION TO THE CLINICAL STUDY OF HYPERTENSIVE NEPHRITIS.

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## The Third Paper: Non-septic Causes of Nephritis.

IN the introductory paper of this series, it was shown that the nephritides, not the result of direct sepsis, should be regarded in no other way than processes initiated and maintained by toxic causes. They should be regarded only as symptoms and the term "nephritis" should be qualified to indicate its genesis. In a clinical sense, the use of such adjectives as diptheritic, enterogenic, typhoid, etc., to designate the underlying cause of the nephritis under observation is of much more value than attempting to indicate the histologic segment involved.

There are also other reasons for changing the language of the clinician when describing nephritis. Clinically, the use of terms indicating structural change in the kidney is warranted only in acute parenchymatous nephritis. By no method of examination now known can definite renal histology be diagnosticated in the chronic types of adult life. In this class of cases, neither the degree of albuminuria nor the character of the casts found in the urine give definite knowledge as to the histological change. The true significance of their presence lies in the degree of irritation progressing at the time the examination is made and any attempt to translate urinary and clinical findings into histologic change is very apt to be fallacious. This conception not only accords with known facts concerning albuminuria in conditions where the relation of cause and effect has been established, but it enables us to understand the occurrence of extreme histologic change with no albuminuria by assuming that the irritation has ceased. This does not indicate always that in the absence of an albuminuria the kidney is not suffering irritation but in conditions where the albuminuria is decreasing, it is certain that the irritation is lessening, and conclusions based on that assumption are clinically sound. The "trace of albumin" therefore has a new significance. It indicates that the irritation is continuing. In such instances the search for causes in all cases must not be slackened until the albumin disappears from the urine finally and definitely.

The primary purpose of this series is to designate the conditions of which nephritis is a symptom. This will naturally indicate the direction along which examinations and investigations should proceed in order to discover the causes and, by removing them, halt the kidney irritation. In practice this should be the rational method of attacking the problem. The relationship which exists between the various "metabolic" * disorders and the poisonings such as with lead, on the one hand, and the nephritides is clinically well understood. It will not be necessary to enter into any prolonged discussion along these lines other than to show that the conceptions already emphasized find complete and satisfactory verification.

Pure types of chronic lead poisoning are rarely encountered. The clinical pictures is nearly always obscured by toxemias from digestive disturbances generated by chronic alcoholism, or chronic septic conditions such as may follow suppurating gums. Yet, the association of lead poisoning and hypertensive nephritis is so constant that the relationship of cause and effect is never questioned. It is unessential to the general practicioner whether the scarred kidney is the cause or the result of the high arterial tension, or whether the cardiac hypertrophy is developed independently of the arterial tension, or whether we accept the teachings of Pässler that the cause of the hypertrophy is purely mechanical. The essential facts of this constant and perfect syndrome are: The trace of albumin in the urine indicating constant low grade parenchymatous irritation which is followed by secondary interstitial overgrowth and contraction; high arterial tension and arterio-sclerosis; and cardiac hypertrophy, all of which are the effects of constant lead absorption.

To one who has followed a moderately severe case of diabetes from its earliest stage when it might rightly be called one of alimentary type, through a long period of increasing acidosis to coma; to one who has watched the expressions of kidney irritation begin and progress as shown by the increasing amount of albumin in the urine, the terms "factor of safety" and "overload" need no definition. In making the analogy we are unfortunate in not knowing the ultimate cause of diabetes, but the conception coincides with those gained from other diseased conditions in which the kidney becomes involved. We are not permitted to believe that the kidney irritation which occurs in the course of diabetes is due to any normal end-products of metabolism, but that it is the abnormal end-products—the results of sub-oxidation which should be held responsible. Referring to the hypothetical case spoken of above, there is usually a long intermediate period when the sugar excretion remains fairly high, and there is a moderate amount of acetone and di-acetic acid in the urine. There is no albumin, not even the proverbial trace. It is during this period that we conceive of a decreasing factor of safety with an overload of sub-oxidation products, normally foreign to the organism. Finally, urinary albumin begins to appear, in traces at first and in more marked amounts as the acidosis increases. As the coma closes the clinical history, the kidney yields not only the evidences of extreme acidosis but the evidences of extreme renal irritation in the large amounts of albumin in the urine. Diabetic coma does not often occur without high

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* In many respects the use of the word "metabolic" is still a cloak for ignorance, and as time goes on it is becoming more and more restricted in meaning when referring to final causes. I doubt if ever metabolism goes wrong without extra-corporal cause. Pending a time when more will be known as to the etiology of these conditions, a place must be given to metabolic disorders in the etiology of nephritis, and they are placed among the non-septic causes. Most of them are characterized by sub-oxidation. Hyper-oxidation is unknown. It is hoped that a coming chapter may be devoted to this subject.

grades of albuminuria as indicating the rigorous irritation, increasing overload and decreasing function. *

This terminal stage of diabetes, as the kidney shows increasing signs of irritation, might well be called the nephritic stage. The final, or determining, cause of the coma lies in retention rather than in elaboration, and is usually measurable by the albuminuria. There is also good evidence to indicate that many of these patients die as much from the result of non-utilization of protein as from the non-utilization of carbohydrate.

Some years ago, what was presumably a pure type of diabetes came under my care. It seemed quite impossible to gain his attention to anything except that he should not eat sugar. Dietary restriction, or periodic alteration and especially the idea of restriction of albuminous intake seemed to be beyond comprehension. To him, eating was an end of living rather than a means and he equalized in nitrogenous food of what he was deprived in carbohydrate. Investigation showed his dietary sometimes contained as much as 250 grammes of protein. The obvious result of this was a rise in systolic arterial pressure from normal to 225 mm. in less than nine months and a quick death from cardiac dilatation. The last months of life were accompanied by all evidences of protein mal-assimilation and mal-utilization. To further illustrate: A diabetic woman, who had been advised to obtain caloric needs from protein,† the carbohydrates being restricted, took a dozen raw eggs on two days in succession. The clinical condition which promptly followed resembled uremia more than diabetic coma. The blood pressure rose and the urine which had contained only traces of albumin, yielded an amount comparable to that of acute nephritis.

Such experiences aid us in analyzing the final picture of diabetes. The digestion, assimilation, utilization and retention of nitrogenous material is quite as much at fault as that of the hydrocarbons and contribute to hasten the end.

Fortunately, it is possible to use as an illustration another condition which is more acute, and which is even more familiar. Whatever may be involved in the etiology of the nitrogenous eclampsia of pregnancy, or whatever the source of the toxin, the effects are constant and definite. If the disease is moderate in its development, there is a period during the early months of pregnancy in which it is assumable that the poison is gradually being elaborated and intoxicating the system. The sources are not definitely known, but it is not conceivable that they are products of normal metabolism. During this period it is assumable that the kidney overload of adventitious substances is increasing and that the factor of safety is decreasing. At some point in its progress, the persisting cause produces a rise in blood pressure. It is important to note that this occurs prior to the evidences of renal irritation-albuminuria. In other words, the operating causes produce the rise of blood pressure independently of renal irritation. This rise of pressure usually antedates the albuminuria by two weeks, and the

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* Cases of diabetic coma occurring without albumin in the urine are largely confined to the severely acute types, in which the outpouring of sub-oxidation products is sufficiently large to intoxicate the organism by quantity alone. This is especially true in the diabetes of childhood. Under these circumstances, sub-oxidation products probably become fixed in the general body cell, upsetting cellular life and depressing vital activity.

† An impossibility, as nitrogenous food-stuffs stimulate the production of more heat than they are capable of yielding. This attribute has been termed "the specific dynamic action of protein" (RÜBNER).

variations in pressure are exquisite indicators of the variations in toxemia. As the factor of safety tends to decrease and the overload to increase, the kidney capacity is reached. A systolic pressure of 175 mm. in a patient showing no disturbance prior to pregnancy nearly always brings convulsions.* The terminal stage, after delivery and eliminative treatment has been instituted, is the disappearance of these symptoms.

Sufficient has been given to establish the main contentions of the discussion as outlined in the introductory chapter and to confirm the basic hypotheses there given. There are always causes. If the causes can be controlled, kidney tissue shows a decided tendency to recover with diminished factor of safety. Each irritation leaves its indelible mark on the renal structure. Finally, the quantity of albumen in the urine is a rough measure of the intensity of the irritation progressing at the time the examination is made.

No consideration of non-septic causes of nephritis would be complete without taking into account both the direct and indirect influence of the luxus consumption of nitrogenous foodstuffs. There is no axiom of medicine better established among thinking clinicians than the one that the regular over-use of meat in the dietary is at least a contributing factor in the production of hypertensive nephritis. It is extremely difficult to estimate the direct influence of such a factor, but it is probably small. The kidney factor of safety for the elimination of normal nitrogenous end-products is so large that the ingestion of meat in sufficient quantity to cause irritation is probably impossible. But the indirect effect of the over-use of protein is one of the most potent and most frequent of causes. Of this there can be no doubt. The question is one which involves proper digestion, and especially absorption; it involves also proper oxidation or utilization by the corporal cells generally. The series of events which occur as the protein molecule passes through the organism is complicated. The factors of safety are low. Should the chain break at any point from over-load, the consequences are certain. These points are so important in the production of nephritis, that the failure of protein oxidation (utilization) and of resorption from the intestine will be considered under those titles.

The following is to be emphasized at present. As protein passes through the various changes in the organism whereby it becomes a source of value to the organism, it must be adequately guarded by carbohydrate and fat as heat-producing elements, or deviations from the normal will immediately follow. Protein or its bausteine presented to the duodenal mucosa in concentration too great or in quantity too large immediately irritates, and a variety of events follow all of which are detrimental to the organism. If the quantity of nitrogen which reaches the corporal cell is relatively too large, and not properly guarded by heat-producing elements, suboxidation is induced, a condition which is probably an accompaniment of all nephritis, regardless of cause.

The over-use of meat therefore in many conditions may be the determining cause of a chronic nephritis. Such an association of causes may be found in a chronic Bright's disease which follows an acute type due to typhoid fever. Here we conceive of the original irritation subsiding with the fever, and a low grade irritation superimposed due to over ingestion of protein; finally terminating in the chronic condition.

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* It has been said that the symptoms of eclampsia find no analogy in other diseases. It is probably anaphylactic shock, and the description of this as given by Vaughan in "Split Proteins" is certainly suggestive. There is an analogy to be found however in infantile convulsions secondary to a packed colon or the inception of infectious diseases. Vaughan explains convulsions of this type on a theory of anaphylactic shock. The inference that the enteron may be concerned in the production of eclampsia will be discussed later.

The effect of chronic alcoholism as a non-septic cause of nephritis will not be discussed, as nearly every clinician has his own conception. The effect is probably indirect through destruction of intestinal assimilation and through processes of sub-oxidation.

It is quite impossible to more than sketch the relationship which various non-septic factors bear to the etiology of that disease, but sufficient has been given to show that "metabolic" disturbances are of themselves but symptoms of a preceding cause and that sub-oxidation is, of itself, probably simply a part of the mechanism. It will be necessary therefore to consider the causes of sub-oxidation in the same manner as we are considering the causes of nephritis and explain to some extent the effect of such processes on the kidney, as the points which will thereby be brought out will have direct bearing on methods of treatment.

## VACCINATION IN PERTUSSIS.*

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### Vaccination.

IN the treatment of pertussis by vaccine made from the Bordet bacilli, the best results follow the very early injection of the vaccine; that is the earlier the vaccine is given, the shorter and milder is the subsequent course of the disease. At the earliest possible moment an initial dose of 50,000,000 bacilli should be given, on the third day a double dose is given and is repeated every third day with a double quantity each time until manifest improvement results. Thereafter the maximum dose is repeated every third day and continued after the disappearance of the whoop for four injections; that is the first injection would be 50,000,000, the second 100,000,000, third 200,000,000, fourth 400,000,000 and so on until an improvement is noted in the cough. If the cough lessens after 200,000,000, that is the dose to be continued.

### Before the Whoop.

A person who has been in contact with whooping cough, who gives a history of a cough without whooping extending over a week or so, especially if it is increasing, should receive an initial dose of 50,000,000, with the dose doubled every third day as already described until improvement occurs. If taken thus early the paroxyms of coughing will be much shorter and less severe. There will be no vomiting and sleep is likely to be undisturbed. In such a case it is more than likely that there will be little or no whooping during the course of the disease.

### Prophylaxis.

Where there are no symptoms but there is reason to suspect a possible contagion by reason of exposure to the disease, four prophylactic injections should be given at intervals of three days, the first of 250,000,000, the others of 500,000,000. One may be reasonably certain of the prevention of the disease for the time at least.

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* Read before the Brooklyn Pediatric Society, December 6, 1914.

# EDITORIAL

## “7 PRIVATE PRESCRIPTIONS 7.”

“I HAVE selected seven physicians prescriptions from my files that have made the originators hundreds of dollars. Prescriptions that have been filled and refilled at my store hundreds of times some of them I make up in large quantities for the physicians to dispense to their patients. There is one in particular that I make up for a specialist in five-gallon lots, it cost to make just 15 cents per quart. He dispenses it to his patients at 25 cents per ounce bottle. I have known him to sell 200 bottles in a single week. Another doctor writes, I want to give the fraternity the benefit of a formula I have in my possession, for——— I have used this treatment for years on some very bad cases without a single failure and have given it to other physicians who report entire success. The other prescriptions are just as valuable. You will never in your life have another chance to get hold of formulas like these they are favorite prescriptions of the physicians that have been used for years by them in their practice. time-tasted formulas that are valued very highly by their owners and have never before been in print. You will get them with full and complete directions for making and using and will send a copy of all seven for only $1.00. When you receive these formulas, if you do not consider them worth 100 times what I am asking for them, I will refund your money. I guarantee them to be perfect, and to be different from anything that you may have no matter how large your collection may be. (-) pharmacy.

Sold Only To The Profession

“Are you awake to the fact that there are opportunities, many opportunities for increasing your income are given in this physicians prescriptions. Why not make use of them? This is the day of specialists and the man to win in his selected line is the one thoroughly prepared.

JOHN JONES,
123————St., Brooklyn, N. Y.”

How vividly this recalls the circus hand bills beginning “20 aerial acrobats 20” and continuing through all that riot of alliterative allurement that reaches its climax in the “grand concert” at the end! The gentleman who has contributed this list of “Seven infallible remedies” is indeed a benefactor to the profession. Think of it! If you pay a dollar for these seven prescriptions, you too can have them made up at fifteen cents a quart and peddle them to your patients at twenty-five cents an ounce! Did we but publish the name and address of this benefactor of his kind, we might expect to see the entire profession of this and the other boroughs waiting patiently in line for their chance to invest a dollar. But then, eruptions of this sort are as prevalent as measles, even though they are not quite so catching. H. G. W.

## THE BELGIAN RELIEF COMMISSION.

THE Treasurer of the Committee of American Physicians for the aid of the Belgian profession reports that so far $5,895.70 has been collected and applied to the purchase of 2,634 standard boxes of food. During the week ending April 3rd $144.00 was contributed. The following remarks by Dr. J. Riddle Goffe are so entirely pertinent that they may well be quoted here:

"Miss Winifred Holt, Secretary of the New York Association for the Blind, has just returned from Europe where she went in the interest of the blind Belgian refugees. She says there is no exact data but it is estimated that one person in every 1,200 in Belgium was either partially or totally blind, or about 8,000. When Belgium became the hotbed of war there were thirteen institutions for the blind, deaf and dumb. These were all wrecked and their sorry inhabitants poured forth in a mad rush of surging masses of blind men and women and children, seeking such guidance as they could get groping for places of safety. They must now be scattered among the helpless, starving, unfortunate refugees standing in the breadline that stretches all over Belgium.

"The President of the National Relief Commission of Brussels asserted on March 25th, that before the next harvest, 2,500,000 Belgians will be in the breadline. Foodstuffs must be continued to be provided in the fairly regular way in which they have been supplied heretofore. Belgium has been saved from the intermittent periods of starvation by the personal sacrifices of the Directors of the American Commission who have at these times pledged their personal credit for as much as $10,000,000. All honor to the Commissioners.

"We of the medical profession of America must see to it that our Belgian colleagues and their families are saved from such intermittent periods of starvation by keeping the stream of food and supply boxes pouring in to them in a steady flow." H. G. W.

## A CAMPAIGN AGAINST CANCER.

THE Sub-Committee on Cancer of the Medical Society of the State of Pennsylvania has inaugurated a movement to bring the question of cancer in all its aspects before the entire medical profession of the country. With this end in view a large number of medical journals, fifty at the time of writing, have agreed to publish simultaneously special numbers devoted entirely to the consideration of cancer. The attitude and object of the Committee have been so aptly stated in a circular sent out to the various medical journals, that one cannot do better than to quote it at length:

### WHY WE SHOULD HAVE A WAR AGAINST CANCER

From the Commission on Cancer of the Medical Society of the State of Pennsylvania.

It is a fact that cancer kills about 75,000 people in the United States every year. Any disease which causes such a high annual toll should command the careful attention of the Government, the medical profession, and the people. The need for this careful attention is all the more imperative if both the morbidity and mortality can be very largely reduced by co-operation on the part of these three forces, *i. e.*, the Government, its people, and their physicians.

The reduction that has been caused in tuberculosis is now a matter of history. There can be no doubt that similar well-directed and persistent activity would cause a similar effect in cancer.

The key to the reduction of cancer mortality lies precisely in this: That cancer always begins as a purely local disease involving a strictly limited area. Second, that this limited area is accessible in about four-fifths of all cases; and third, and most important, a commencing cancer practically always indicates its presence when it is still in its early, locally limited, and permanently curable stage. In other words, the enemy that we have to fight is not the cancer, but the delay. Nearly 60,000 of our people die every year, not because they have cancer, but because they have waited till the cancer became incurable.

The causes for delay are, first, that the people know little or nothing about cancer. The layman or laywoman does not know that certain evident signs and symptoms mean that cancer is insidiously creeping on them and will be fatal unless recognized and checked in time. So that a large proportion of our 60,000 unnecessary cancer deaths occur because the people do not know. If a woman has a right to kill another human being to save her own life when attacked, how much more has she the right to know that a fatal disease has begun its attack on her? A woman who loses her life at forty simply because she never knew that irregular vaginal bleedings indicated the presence of a cancer while it was in its early curable stage certainly has not had her fair chance at the hands of civilization. If our people are dying because they do not know, we, the doctors, must teach them. We must teach women that a lump in the breast, no matter how small or how painless, may be the starting point of a serious condition and must at once be investigated by a competent physician. We must teach women that irregular vaginal bleeding, the onset of a discharge, etc., may be early warning symptoms of cancer of the uterus. We must teach all people that a mole or a wart which begins to grow, bleed, or ulcerate, is a danger sign that must be heeded at once. There are similar early signs in other portions of the body that may forewarn people, and of which they should have accurate knowledge.

There is also a great field in the conditions marked by chronic irritation and the so-called precancer lesions. Recent statistics show that in about 40% of cases the cancer, the malignant disease was preceded by long-continued simple diseases or by some form of chronic irritation. In other words, a large proportion of cancerous people need not have had the disease at all if they had been forewarned and had their precancerous condition cured.

The second great problem lies with us as medical men. Are we as active in the treatment of precancerous diseases as we should be, or do we only too often put our patients off with some placebo and advise them not to worry? Do we always insist on a thorough examination when a patient comes to us with symptoms that may mean cancer? When an early cancer is present, do we always lay proper emphasis on the necessity for proper treatment at once? Do we not too often advise the one course which can yield to disaster and tell our patients to wait and see what develops, *i. e*,., wait till the cancer becomes inoperable? Unfortunately at the present time these questions must be answered to our disadvantage. A recent extensive investigation has shown that on an average the family physician has had his cases of cancer under observation for about a year before they come to a real attempt to cure the disease. Our attitude to cancer needs to undergo a radical change. The average of one year's observation must be cut down to a few weeks, or, best, to a few days. Immediate attention to the precancerous condition, counsel in the doubtful cases, and immediate action in the positive cases, is the only proper service we can give our patients. To do this, we need a campaign amongst ourselves, too. A new and more efficient spirit must be created which will result in constant watchfulness to keep our patients from swelling the thousands of untimely and unnecessary deaths from cancer.

To arouse the profession fully to the necessities in the war against cancer, a movement has been started by which, during the present few months, State and County Societies all over the country are devoting special meetings to the study of cancer, and in addition, the vast combined influence of American medical journalism has been enlisted, and the Long Island Medical Journal has united with fifty other medical journals to provide for its readers special cancer numbers. It would seem from the number of journals co-operating that the message must be brought directly to every medical man. We are sure that in this way the interest of the medical profession will be aroused for years to come, and we are sure that the time will be soon at hand when no blame for participation in the fatal delay can ever be laid at the door of an American physician.

H. G. W.

## "NOT NEW BUT FOOD FOR THOUGHT."

WITH these words a correspondent has concluded a brief letter which says, "In the 'Evening Telegram' along with the advertisements of Dr. Morris, Dr. Gray, Andrew Egan, M.D. and Val-Vito for Men can be seen the following:

> " 'Free advice regarding venereal diseases can be obtained at the Department of Health, 149 Centre Street, room 207, from 9 a. m. to 12 m. daily, Sundays and holidays excepted. All consultations strictly confidential.' "

Does the Doctor feel that the Department of Health by advertising in this way has sunk to the level of the other quacks who make their living from the secret diseases of men? His is not the first comment directed more or less emphatically against the stand which the Health Department has taken in dealing with the venereal problem. At first glance it does seem an undignified way for the department to bring its activities into public notice, but it must be remembered that those whom the department particularly desires to reach, the ignorant, gullible and the credulous, are those who read just the advertisements that have been quoted and if the Health Department wishes to reach them how can it do better than to place its plain statement of fact alongside of the objectionable advertising matter that it is endeavoring to combat, where it is most likely to be read? This is a very present evil, this venereal problem, and ignorance is one of the main factors through which it spreads. For years the only attempts to curb it have been the sporatic ones of an occasional enthusiastic physician or rarer layman and it was not until the organization of the American Society of Sanitary and Moral Prophylaxis that the movement grew into an intelligent campaign. Any agency that serves to bring forcibly and truthfully before every citizen the facts of the venereal peril should be welcomed as an ally and the Health Department in this instance instead of censure should receive commendation in that it has grasped one very important feature of the problem and is attacking it fearlessly as it should be attacked—by the very weapons that the quack finds so efficacious.

H. G. W.

# Correspondence

## AN OPEN LETTER TO THE NESTLE'S FOOD COMPANY. IN REPLY TO "AN OPEN LETTER TO THE PHYSICIANS OF LONG ISLAND."

Nestle's Food Company,
233 Broadway,
New York City.

Gentlemen:

Since you have done me the honor to take issue in such a public way with some of my statements in the February issue of the Long Island Medical Journal, it would seem only reasonable for me to state my beliefs as clearly as possible and to give the facts upon which they are based. Your suggestion that I have not given enough study to the subject to know what I am talking about is hardly worth discussing. I am perfectly willing to leave that question to the decision of the medical profession of Long Island.

Whether or not my statement is "biased and unfair" depends upon its accuracy. As you did not reject the analysis of Nestle's Food which I quoted, I assume that it is substantially correct. It was as follows: Fat 5.75%. Protein 11:50%. Lactose .21%. Total Carbohydrate 77%. Wheat starch, raw and cooked, 16%. Even if I granted your argument for "dried milk" feeding—and I do not—this could hardly be called dried milk. Whole milk contains approximately equal parts of fat and protein. What has become of the fat? Milk contains one-third more lactose than protein. What has become of the lactose? Why the raw starch? Do you consider it essential in the feeding of all infants? As there is no lactose and you do not claim to make a malted food I suppose the other 60% of carbohydate is cane sugar. Assuming that such an enormous percentage of sugar is good for infants why do you substitute cane sugar? Is it because you can sell the milk sugar to advantage?

In the directions for feeding which accompany the packages of food, mothers are told to add two teaspoonfuls of food to six and one-half ounces of water during the first week, giving fifteen ounces in 24 hours; at two months, two teaspoonfuls to three and one-half ounces giving 30 ounces in 24 hours; at four months five teaspoonfuls in six and one-half ounces, 35 ounces in 24 hours. This gives dilutions of about 1-25, 1-14 and 1-10 respectively with the following percentages respectively:

| Fat | Protein | Starch | Total Carbohydrate | Lactose |
|---|---|---|---|---|
| .25% | .5% | .66% | 3 % | ? |
| .5 % | 1. % | 1. % | 6 % | ? |
| .6 % | 1.1% | 1.5 % | 7.7% | ? |

Human milk is as follows:

| | | | | |
|---|---|---|---|---|
| 3.5 % | 2 % | none | 6.5% | 6.5% |

Do you really believe in the value of the substitute?

Yours truly,
LOUIS C. AGER, M.D.

# Obituaries

DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

## JOSEPH FRANCIS BLOODGOOD, M.D.

Born in Flushing, L. I., August 4, 1859, and died there on March 12, 1915. He was the son of Isaac Bloodgood and Mary Cary.

His early education was received at the Flushing Institute and Columbia University. His medical education at the College of Physicians and Surgeons, New York, where he received his degree in 1884. This was followed as interne at St. Catharine's Hospital. His post-graduate course was at the Universities of Berlin and Vienna. He practiced medicine in Flushing during his professional life. For many years he was surgeon to the Flushing Hospital and the Long Island Railroad.

Dr. Bloodgood was a member of the Queens-Nassau Medical Society, New York Academy of Medicine, Medical Society of Greater New York, and the Associated Physicians of Long Island from 1900-15.

He was also a member of the Holland Society, St. Nicholas Club, Niantic Club, Reform Club of New York. W. S., Sr.

## CHARLES OSBORNE TUPPER, M.D.

Born in 1862 at Amherst, Nova Scotia, and died in Brooklyn, N. Y., February 22, 1915. He was the son of Nathan Tupper, M.D., and Ellen Bent.

His medical education was received at the Jefferson Medical College, graduating M.D., in the class of 1886. He was a member of the Medical Society, County of Kings, from 1900-10, Associated Physicians of Long Island from 1911-15, and the Brooklyn Society for Internal Medicine. Dr. Tupper is survived by his widow, Charlotte K.

W. S., Sr.

## CHARLES EUGENE LACK, M.D.

Born October 25, 1871, at Bethlehem, Pa., and died in Brooklyn, N. Y., February 26, 1915. He was the son of John Jacob Lack and Mary Louise Kintzel, both of Germany. He was educated in the public schools, and received the degree of Ph.G. from the Philadelphia College of Pharmacy in 1891, and M.D. from the University of Pennsylvania in 1895. He took a post-graduate course at the Long Island College Hospital in 1895-96, during which time he was interne at the Norwegian Hospital.

He was a member of the Medical Society, County of Kings, from 1897-1915; Associated Physicians of Long Island, 1901-15; American Medical Association, Brooklyn Surgical Society, Brooklyn Pathological Society, Medical Society of Greater New York, Crescent Athletic Club, Minerva Lodge, F. & A. M., and Park Slope Council, R. A.

During his professional life he was surgeon to the Norwegian, Methodist Episcopal and Coney Island Hospitals.

Dr. Lack is survived by his widow, Elizabeth Bolton, and two sons, John Bolton and Charles Eugene Lack, Jr. W. S., Sr.

## STUART HENRY BENTON, M.D.

Born September 5, 1845, at Albion, Pa., and died in Brooklyn, N. Y., March 2, 1915. He was the son of Erastus N. Benton and Charlotte M. Lincoln, both of New York.

His early education was at the Pennsylvania State Normal School. His medical education was under the direction of O. Logan, M.D., and completed at the University of Buffalo, where he received his degree of M.D., in 1870, a post-graduate course at Bellevue Hospital Medical College in 1879. He was a member of the Medical Society, County of Kings, from 1882-1913; Associated Physicians of Long Island, 1902-15; Brooklyn Medical Society, 1895-1900; American Medical Association; Kings County Medical Association, and Acanthus Lodge, F. & A. M. For a number of years he was surgeon to the Bushwick Hospital.

Dr. Benton is survived by his widow, Anna Mendes, and two sons, Frederick L. Benton, M.D., and Stuart H. Benton. W. S., Sr.

## SAMUEL HENRY RABUCK, M.D.

Born at LaValle, Wisconsin, on December 23, 1870, and died at Huntington, L. I., March 3, 1915. He was the son of Frederick Rabuck of Germany and Reviah L. Haskins of Wisconsin.

He was educated at Redfield College and Valparaiso University. His medical education was received at the Rush Medical College, where he graduated in 1896.

He practiced medicine in the west for a number of years and came to Huntington about four years ago. He was a member of the Associated Physicians of Long Island from 1913-15; Jeptha Lodge, F. & A. M., and Elsworth Lodge, I. O. O. F.

Dr. Rabuck is survived by his widow, Katherine P. Towne, to whom he was married on June 28, 1900, and a son, Jennister Rabuck.
W. S., Sr.

## JOSEPH H. RAYMOND, A.M., M.D.

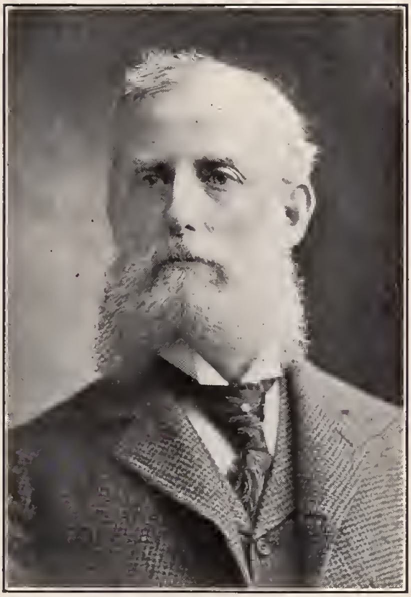
The Faculty of the College of The Long Island College Hospital is desirous of placing on record this memorial minute on its late associate, Professor Joseph H. Raymond, A.M., M.D., Secretary of the Faculty.

Dr. Raymond was born in Brooklyn, N. Y., November 18th, 1845. He was the son of Israel Ward Raymond and Frances Bryant Howard. He received his preliminary education at the Brooklyn Polytechnic Institute and was graduated from Williams College in 1866, receiving his A.M. degree three years later. He was a graduate in medicine of The Long Island College Hospital in 1868 and of the College of Physicians and Surgeons in New York in the following year. After graduating in medicine he served on the staff as interne of the Nursery and Child's Hospital and Idiot Asylum on Randall's Island, N. Y., and subsequently in the Brooklyn Hospital. He spent several years in general practice and was well equipped in all respects to succeed as a general practitioner. But his tastes led him to relinquish the duties of a general practitioner and to devote all his time to the teaching of Physiology and Sanitary Science and so to further the interest of the community in preventing rather than curing disease. He was for many years connected with the Health Department as Sanitary Inspector, Sanitary Superintendent, Deputy Commissioner and Commissioner of the Brooklyn Board of Health. Brooklyn never had a more efficient Health Commissioner than Dr. Raymond. His experience and training in subordinate positions in the department rendered him peculiarly fit to assume the responsible duties of Commissioner. He made no enemies (except law breakers) while holding this office the duties of which require tact and good judgment in the fulfilment. He did his full share in gradually lowering the death rate of the city not only by his efforts as Commissioner of Health but by his teaching at The Long Island College Hospital, where by his systematic work in Physiology and Sanitary Science he planted in the many hundreds of graduates the seeds of a knowledge in these branches which is bearing such satisfactory fruit in the city's diminishing death rate.

Dr. Raymond filled the position of Secretary of the Faculty for nearly thirty years, and was an ideal Secretary. His knowledge of the details of the office was always accurate and at his fingers' ends. His long experience in that office must have given one so thoroughly equipped for the work as he was a knowledge of the duties of the position that was invaluable to the institution. He not only attended to the minutiae of the office but in his interest in the success of the college he foresaw and bent every effort to secure the adoption of measures calculated to further the welfare of the school. It was at his suggestion that the late Mrs. Theodore Polhemus, when generously donating a fund for the erection of the Polhemus Memorial Clinic in memory of her husband, added to the clinic building sufficient space to be used for the instruction of students; so that the college has through Dr. Raymond's foresight a structure that is admirably equipped both for teaching and clinical work.

Besides his work in and for the Long Island College Hospital, Dr. Raymond was interested actively in general and medical education as a Trustee of the Brooklyn Polytechnic Institute, a Director of the Brooklyn Eye and Ear Hospital, editor for several years of the Brooklyn Medical Journal; author of a History of the Long Island College Hospital and its Graduates and a standard work on Physiology, as well as numerous papers on medical and sanitary subjects. He was an excellent French and German scholar, and became much interested in Esperanto and attended the Esperanto Congress in 1908 in Dresden. He served as Secretary and Treasurer of the Hoagland Laboratory and Secretary of the Polhemus Memorial Clinic. He was at one time Medical Examiner for the New York Board of Education. He was a member of the Medical Society of the County of Kings, New York Physicians' Mutual Aid Society, Vice-President of the American Public Health Association; Visiting Physician, St. Peter's Hospital, and other societies and charitable institutions.

Dr. Raymond in 1875 married Miss Nannie Van Nostrand Gardiner, who died in 1898. He subsequently married Mrs. Rachel Biddle Craven of Philadelphia, who, with her son and daughter, survives him. He is also survived by a daughter by his first marriage, Mrs. Ernest W. Congdon, and one grandson. Personally, Dr. Raymond was a charming companion and associate—alert of body, quick in thought, word and action. His white hair was the only physical feature that made one think of him as a man past middle life. He



J. H. RAYMOND, M.D.

thought the present times were better than the past and the future times would be better than the present. Quick at repartee, of ready wit, he could always tell a story a little better than the one told to him. When some one complained that at present it cost more to live than formerly, he replied it is worth more to live at present. His reply to one who quoted, referring to the great men of the past, "There were giants in those days," was "Goliath's bulk didn't save him from little David's stone and sling." Courteous and considerate of one's feelings, he endeared himself to the students of the college and all of the members of the Faculty who have for so many years been associated with him. He leaves behind him a life full of good words and works, and a memory of his personality that the Faculty will always cherish.

[Committee] Frank E. West, M.D., Chairman.
W. B. Brinsmade, M.D.
John A. McCorkle, M.D.
John D. Rushmore, M.D.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

*Regular Meeting, October 1, 1914.*

The President, Dr. J. C. Kennedy, in the Chair.

### A Case of Primary Tuberculosis of the Fallopian Tube.

*H. F. McChesney, M.D.*

I have three cases to present:

Case I: (Patient unable to come at the last minute.) I would like to give a little of the history of this case:

In August, 1913, this patient came to me complaining of a pelvic condition with not very much pain. On examination I found that the right tube was very much enlarged and I started treatment, but this condition did not improve and the left tube began to enlarge. Each tube mass became about the size of an orange. I arranged to do a posterior vaginal section at the patient's home. During the night previous to operating, the left tube broke through and discharged into the uterus causing a bloody vaginal discharge with some pus. The next morning I did a posterior vaginal section, opening the right tube posteriorly and put in drainage.

Along in November the right tube refilled. I took her to the hospital and did a second posterior vaginal drainage. At the end of five weeks I did a laparotomy. At this time the left tube had a few miliary tubercles on it, the right was thickly studded with miliary tubercles, a few over the uterine body; the intestine was practically free of tubercles. Both tubes were removed and rather a large free drainage was left through the cul-de-sac of Douglas.

At the end of twelve days I noticed a fullness around the abdominal wound; the stitches were removed; opening up the abdominal wound I found some pus. After fourteen days fecal material began to discharge from the wound; patient also menstruated through the wound as well as the vagina. Since August, 1914, this condition has cleared up until at present there is a small sinus opening of the abdominal wound and also a sinus into the posterior cul-de-sac where the posterior drainage was made after vaginal section.

Nothing further in an operative way has been proposed for the patient's resistance is very low. She is now wearing an abdominal belt support and feels perfectly well, having gained twenty pounds in weight.

Patient was in the hospital from November 16, 1913, to April 5, 1914, then lived out of doors in the mountain district of Pennsylvania until August first of this year.

What I wish to bring out in this case is that I believe it was a primary tubercular tube and as I gather from the literature, primary tuberculosis of the Fallopian tube is not very frequent.

Case II. Cellulitis of the Arm. Patient.

The patient, a butcher by occupation, came into the hospital on July 22nd, and remained until September 17th.

Two weeks before admission he had a scratch on his left arm; rather an insignificant scratch (which did not go through the skin), by a piece of bone. He took comparatively little care of it.

On admission he had a cellulitis including the arm well up onto the shoulder. It was a question whether the arm could be saved. Five incisions were made each about five inches long. From the pain and height of temperature (105°) we were not certain that it had not become a bone involvement. Patient delirious for from four to five days after operation, hand and inner side of arm up to and involving axilla very much swollen and red, circulation somewhat shut off and the involved skin area from axilla to elbow gave way leaving a raw area which had to be skin-grafted. The skin over the sight of the infection remained intact.

There is still a little edema which I think will equalize in time.

The special point I would like to bring out in this particular case is the slight injury, the high virulence of the infection and the poor resistance of the tissue.

Case III. Carcinoma of the Cervix. Patient.

The special point which I would like to bring out in this next case is to what extent a carcinoma may grow before there are symptoms that bring it to one's attention—recurrence—and radium treatment.

The patient came to my office on December 8th, 1913. She complained at this time of a little irregularity in her menstrual flow over a short time, and as I came to go into her history, considering her age, which was 50, I examined her. Very much to my surprise I found a well-marked carcinoma of the cervix. It had elevated the cervical ring, passed up over the cervix on the right side and well into the broad ligament. The lower section of the broad ligament was quite infiltrated. Patient was taken into the hospital and on Dec. 10th, we attempted a two-stage operation. The cervix was taken away as completely as possible, reaming well out under the vaginal wall, with an electric cautery, trying to make a slow cutting and taking a little of the lower body of the uterus, and out about as far in the vagina and broad ligament as we dare go. At the end of six days we began to get, besides the ordinary bloody discharge from the vagina, a rather watery discharge. This showed urea on laboratory test and continued for twelve days, (this proved to be from the bladder).

At the end of this time the abdomen was opened and a complete panhysterectomy was done, with the cautery, except that we separated out to locate and identify the ureters. Then we simply reamed out the rest of the uterine body with the cautery, protecting the bladder and ureters.

There was a quick recurrence forty-nine days after operation. On examination I found a small cauliflower growth that showed through on the surface. This looked almost like granulation tissue only it was harder and pliable and not where one would naturally expect granulation tissue. This was cauterized with an electric cautery but the edges thickened up and showed again. It was then re-cauterized but it made a third showing. I then communicated with Dr. Howard Kelly of Baltimore. Patient entered his hospital and on June 20th had first application of radium applied under anaesthetic, amount between 1700 and 1800 grams, duration of application three hours. Patient returned to me for examination at the end of ten days when I found a marked reaction with a great deal of sloughing and vaginal discharge. This condition continued for some time and finally left a heavy indurated mass.

On August 1st patient returned to Dr. Kelly for second application, smaller amount of radium applied by vagina and 1800 grams applied over the abdomen (heavy padding underneath) for twelve hours. Patient again returned to me at the end of ten days and I found the heavy indurated mass had disappeared. In its place I found a mass of tissue slightly thickened with a small unhealed area.

Today radium seems to have control of the diseased area, the tissue looks healthy up to the very edges and the deep wound, which was probably nearly two inches in depth, where the primary application had been made, has closed down until it is now less than 1-2 inch in depth and a centimeter in its cross diameter. The patient is free from pain and has gained in weight.

## Cases of Tuberculosis of the Spine. Patients.

*C. D. Napier, M.D.*

It seemed to me it might be interesting to show a few cases of tuberculosis of the spine. I had hoped to show several after the Albee operation as well as some treated under the old conservative method, but this is the only Albee I have to show.

Case I. This boy was operated only three months ago and he is still wearing his plaster jacket.

Albee does not usually put on a plaster jacket or a brace.

Hibbs in his operation uses a brace afterwards.

Albee feels that without the jacket the functional use of the graft helps to develop the graft, which is a pretty nice point and there is a great deal of truth in it, but the most of the men doing the Albee operation have not the confidence in it that Albee himself has and feel a little better if the spine is supported until the graft develops, so this boy will wear his jacket for a while.

I want to show in regard to this and the other cases when to use the Albee operation and when to use the conservative treatment.

This boy came to me a little late. He had, as you see, developed a good deal of kyphos, and when I first saw him he was on a frame and I kept him on a Bradford frame for a year. A sinus, which was open at the time, kept on discharging and did not show signs of letting up. He was pretty wild on the frame, but with a plaster jacket applied he was held in check. Still the sinus continued to discharge, so the Albee operation was put up to the mother and accepted. The operation was done last June and the sinus has shown signs of lessening in the amount of discharge. It is considerably less than it was. The disease is in the mid and lower dorsal, a part of the spine that is a little harder to hold. The operation healed up beautifully and there was no trouble at all. He had been wearing supports for a long time, so he cannot stand up without them, except just a little. The incision, is to one side of the spine. Albee first made it directly over the spinous processes and then changed to one side as he found it heals better. The leg also healed up perfectly. In fact, we never have any trouble in the leg, the bone seems as strong as it was before.

Case II. This boy was in bed for a year. He was in a brace for four or five years. The disease was in the twelfth dorsal. He is nineteen years old now and he was nine when we started. He came to us before there was any deformity, so there was nothing to see and he was able to bend fairly well. There was not much limitation of motion when first seen, but he could put his finger right on the spot every time where the pain was. That is the time when we like to get them—before the deformity.

The knuckle, the kyphos, in this case was very small. On first seeing him there was no kyphos at all, but it developed a little in bed. Compression of the body of the vertebrae took place while he was on his back, so it showed a slight knuckling of the twelfth dorsal and in the brace treatment the pressure of the brace forced it in so that now you may say there is practically no kyphos, and motion is practically perfect. He had only just a beginning abscess, nothing to amount to anything.

Case III. This little girl is ten years of age now and had a kyphos when I first saw her, which was fairly marked—somewhat angulated. It was about the fifth or sixth dorsal, a pretty bad place. She was kept on a Bradford frame for fully a year and she had the Calot jacket with the head support applied, so the head was held perfectly rigid, and she wore that plaster, and then plasters including the shoulders as she got better, for about a year and a half, and then had a brace with a chin cup. For about two years she wore a brace, and now she has been without the brace for a year and a half; so that she was under the treatment of Bradford frame, plaster jacket and brace for five or six years. Now she shows a little round back, but it is very difficult to find out which bones are the more prominent. There were about three vertebrae involved, so it was a rounded kyphos. At this point disease is very apt to be mistaken for round shoulders, if the symptoms are not very decided, and in the dorsal spine the symptoms are not as decided as in other parts of the spine, so the disease may go on and on, even though the father and mother use the greatest care in watching the child.

The only trouble we have had with this girl was to keep her from getting round-shouldered. She has been on exercises every day, exercising the dorsal muscles, lying prone, by raising the head and shoulders, which is exceedingly important to direct before leaving off mechanical treatment. The jacket or brace leaves the muscles weak, just the same as a corset does. Therefore, before the brace is left off begin exercising and developing and massaging the spinal muscles to make them hold and take the place of a brace. She is cured with a little round-shoulder.

Where the mid-dorsal is affected, the kyphos will often increase in spite of treatment. Sometimes the kyphos will increase on the Bradford frame and the same is true of the plaster jacket and brace. I think a large proportion of them will increase and I have come to the conclusion that in those cases the

Albee operation ought to be urged rather than the conservative treatment. In the mid-dorsal spine I believe in the Albee operation in every case and that it should be taken early. In the lumbar spine, in the lower dorsal and in the cervical regions if we get them early and treat them carefully and do not be afraid of the length of time they are kept in bed, we can get these good results. The large majority of them get well with a nearly normal spine, if they are only taken early enough and kept on their back long enough. I believe it is very bad treatment to start right in with a plaster jacket or a brace, no matter how good the plaster or brace may be, for the reason that the weight of the head and shoulders is pressing down on the vertebrae and kyphos is bound to result. If you put them on their back and extend the spine, and hold them there for a year, the bone heals up and heals up normally. If by slow and long treatment you are able to get a normal spine and free motion, what is the use of doing the Albee operation and grafting together three or four and generally five or six bones in order to hold it and stiffening that much of the spine? If in the majority of cases you are unable to treat without deformity in the mid-dorsal spine (and it is true that in this region in the majority of cases you cannot get along without deformity) then I believe in the Albee operation, but in the lower dorsal and lumbar, if you can obtain the proper hygiene and proper care of the children on their back, the old conservative treatment is better than the operative.

Case IV. This boy has had his brace off for less than a year and he has, pretty good motion. The disease was in the tenth dorsal and the same treatment was used for about five years.

Case V. This boy has had his brace off for three or four years. He has lumbar Potts and came very near not having the opportunity of showing himself before you. He was treated first by an osteopath for three months and the manipulation given him was rather hard and, worse still than the manipulation, was the fact that he was running around with his diseased lumbar vertebrae, but the Bradford frame, plaster jacket and brace cured him. While on the Bradford frame he developed something else. We are not quite sure now just what it was, but his family physician diagnosed it as tubercular meningitis and Dr. Kerr made the same diagnosis and I agreed, but I do not know that we are quite sure about it now, although he certainly had all the classical symptoms and was pretty near the next world.

He was on a Bradford frame for a year, in plaster of Paris for two years and in a brace two years, perhaps a little longer. Usually, I keep them under treatment rather over five years than under, but always try to have them a full year on the Bradford frame, which is most important, as we know that the bone cannot harden up much under a year, so why should we let them go about with the weight of the head and shoulders pressing on the body of the soft bone? And if it can harden and heal up on a Bradford frame and they can be put in a go-cart and taken out of doors and kept out all day and kept on a porch all night, you can secure, I think, a perfect spine, like this, in the majority of cases.

To sum up: The points I wish to bring out are:

Get your case very early and keep the child a long time on a Bradford frame, if the disease is in the cervical or lower dorsal or lumbar region. If the family is ignorant and the proper hygiene cannot be obtained and the child cannot be kept on the frame and managed properly, then the Albee operation is a splendid one to perform.

If the disease is in the mid-dorsal I believe in not only offering but urging the Albee operation. I always offer the Albee operation now in cases of Pott's disease and put it up to the parents, stating the pros and cons, and leaving it to them to decide, but in the mid-dorsal spine the Albee operation should be urged.

The Albee operation seems to be the one that is approved of now by the majority of the orthopedic surgeons. The Hibb's operation is done by a number. We have tried several Hibbs operations at the Kings County Hospital and we don't feel quite sure about it as yet, except that we don't like it as well as the Albee operation. In the Albee operation, as Albee himself says, you have already fixed it when you get your piece of bone in the spine, you have it well anchored and you know you have a good support, whereas you know you have not when you turn down these small cartilaginous spinous processes one against the other.

## A Case of Giant Cell Sarcoma of the Superior Maxilla. Patient.

*Joseph Tenopyr, M.D.*

This patient came to me on May 4th, 1913. She was nine years of age at the time. She presented on the superior maxillary bone, on the right side, a tumor about the size of a pigeon's egg, with marked venous blood supply over it on the mucous membrane. Her family history is negative as to the present condition, she being an only child.

Previous history: Measles, Whooping Cough and Chicken-pox.

Seven months prior to May 4th, 1913, she was struck on the right side of the face and there is a slight scar remaining. No swelling was noticed until about two months after the injury. Then this swelling on the upper jaw started and she was taken to a dentist and some roots were removed. The dentist noticed this swelling on the upper jaw and incised it several times, squeezing a lot of blood out of it, and finally he became alarmed and sent the case to another dentist who proceeded to do the same thing. He reduced the swelling by probing at it, and finally, as it seemed to get away from him, the parents then brought the child to me. A diagnosis of sarcoma of the superior maxillary bone was made and I have two x-ray plates to show the condition. The Wassermann in this case was negative.

I operated the child on May 7th, at the Prospect Heights Hospital. The thing which worried me most was hemorrhage; so preliminary to any work on the face I ligated the external carotid artery. This seemed to simplify the procedure very markedly by practically making it a bloodless affair. The incision, as you see, is a Ferguson incision. The superior maxillary bone was removed by chiseling along the anterior aspect, then seizing it with a small pair of lion jaw forceps and breaking it out. No hemorrhage resulted from the internal maxillary artery at all, and I packed the wound with a solution of 1/1000 potassium permanganate and on the fifth day she was out of bed and about. There was no special incident during her recovery. At the present time she shows no recurrence of any kind.

The only thing I wish to mention about this case is that in my anxiety to go wide of the area involved, the lacrimal duct was cut and she has a little trouble there in the winter time as the tears are not carried away and they fall down her cheek.

Microscopical examination reported by Dr. Hala and confirmed by Dr. A. Murray as being giant cell sarcoma.

## A Case of Ankylosis of the Jaw. Patient.

*Joseph Tenopyr, M.D.*

The next case is that of a child ten years of age. She came to me on March 14th, 1912. She is an only child and her parents are living and well. When six months old she had bronchitis. At nine months she had conjunctivitis. At two years she had scarlet fever and at three whooping cough. She apparently has been sick more or less all the time. At about the age of seven she had pleurisy and pneumonia and, as the parents describe it, there is some reason to believe she also had a meningitis at this time. During the end of her convalescence from this series of conditions (pleurisy, pneumonia and meningitis) her parents noticed that her face became markedly swollen on the left side. This swelling persisted for about four hours; then a bad-smelling pus exuded from the nostril on the left side and then the swelling of the face went down and the child then got better and went about her usual affairs; that is to say, she could play around. Three days after this pus which exuded from her nose, her back teeth fell out on the left side in the upper jaw. Then the parents began to notice that the mouth did not open very much and that the child did not eat as well as usual. The odor from the mouth was very offensive. The child was taken to a doctor who took out some bone from her upper jaw. Then a few days later the father took out six pieces of bone, as he describes it. About four months from this time, her left ear began to discharge and a month from that time her mouth closed entirely. She couldn't open it at all and thereafter, for a period of about a year and three months, she went to a doctor in New York, an eclectic physician, who used irrigation and then tried to open her mouth by some type of wedge. That brings her up to the time when she came to me (March 14th, 1912). At that time I could hardly get the width of a blotting paper between her teeth. The wound in the upper jaw was discharging at that time. She also complained that when she ate food it regurgitated through her nose. I got two ordinary screw mouth gags and opened her mouth to the extent that she held the screw mouth gags in as far as the two last rings that is to say, I got her mouth open about an inch. I suggested operation to the parents, or some other form of procedure. I suggested giving her an anesthetic and see if we could not open her mouth. I felt the condition was a fibrous one and would probably open up under anesthesia, but all treatment was refused. I haven't seen her for a year and not having anybody to keep after her to keep inserting the screw mouth gag, she is in about the condition in which I found her when I first saw her.

## Cancer of the Rectum.

*F. C. Paffard, M.D.*

The patient, F. M., age fifty, applied to me, complaining of slight bleeding from the rectum and hemorrhoids. He had been under treatment for four months for the hemorrhoids. On examination, the patient had lost eight or ten pounds, but was still in good condition. There were some external hemorrhoids. Digital examination showed a mass about one and one-half inches from the anus and about the same thickness. The finger could be passed through the encircling growth. A speculum revealed a typical carcinoma of the rectum. A Wassermann by Dr. Murray was negative. July 28th, operation at Skene Sanitarium; patient in an exaggerated lithotomy position, purse string of heavy silk was put around the anus; median incision was made from the base of the scrotum to the base of the coccyx. The coccyx was removed. The space behind the rectum was cleared of fat and one or two sacral glands. The rectum was drawn out away from its attachments in front and pulled down, using a purse string as a tractor. The peritoneal reflection in the rectum was pushed up, after cutting away the lateral attachments of the rectum. Fortunately, it was not necessary to open the peritoneal cavity. The lower four and one-half inches of the rectum and anus were now cut between two purse strings of heavy silk, with the cautery. The stump of the rectum still closed was anchored in the space formerly occupied by the coccyx and fastened by a few silk sutures. A drain was placed anterior to the rectum and the rest of the wound sutered. After the patient was returned to his bed, the ooze of blood became very profuse and it became necessary to pack with gauze behind the rectum, as well as in front. These packs were removed in 48 hours. The purse string closing the rectum was removed at the end of the fifth day. The patient convalesced nicely and was up out of bed on the eighteenth day. The wound healed by primary union throughout the greater part, and there was no infection of the deep spaces, which were drained by gauze. The purse string closing the rectum did not seem to cause much pain and it kept the wound clean until healing was established. The patient is now in the Catskills and is able to get about in good shape. There was no recurrence up to two weeks ago.

## Scrotal Hernia Containing an Inflamed Appendix.

*F. C. Paffard, M.D.*

J. W., age 25, was referred to me by Dr. W. Hutchinson, complaining of pain in a hernia. On examination, the patient had a large scrotal hernia, partly reducible; temperature 99 1-2; pulse 80. He had some vague abdominal pains, but no tenderness except on pressure. A Bassini operation was done June 17th, 1914, at St. Peter's Hospital. The entire cecum and appendix were in the hernial sac. On lifting up the cecum, a gangrenous appendix presented. This was removed and the operation completed as usual. The internal ring was very large and was closed by a purse string suture, in addition to the usual ligation of the sac. The convalescence was normal and the scar is now firm.

The point of interest in this case is the fact that this man had a very sick appendix with no symptoms suggesting such a condition.

## Complete Avulsion of Scalp. Patient.

*R. P. Sullivan, M.D.*

Dr. Roger Durham, in opening the discussion, said:

"In regard to the case of avulsion of the scalp, I would like to mention a method of skin grafting which we have used successfully and which bears out what the doctor has said in regard to the removal of grafts and the method of preparation.

"Last winter, in Dr. Arthur H. Bogart's service, we had three cases of skin grafting, two of which had carbuncles of the back of the neck, and in which there was an area perhaps four by six inches. The first man when brought to the operating room had received no preparation whatsoever. The thigh was shaved and a five per cent solution of tincture of iodin was applied, and the skin grafts were removed directly and applied to the neck.

"The method of holding the skin graft in place I have already mentioned before the Society. It is a method devised by a man whose name I have forgotten at present, but I have used it in ten or fifteen cases since then. Directly over the skin graft a single layer of gauze is applied and this is held in place, in the case of the neck, by a single layer bandage placed around the neck and pinned at the back, or if it is in some other part of the body, the single layer of gauze can be held in place with adhesive. That gauze is not removed at all for five or six days. Over that a compress, wet with Thiersch solution, is placed. The compress is removed daily, but the gauze is not, and the grafts are washed off with Thiersch solution.

"In the case following we used the same method of preparation of the thigh with tincture of iodin.

"In the first case at the end of the third day, the grafts looked like old skin and took perfectly. In all three cases the result was very striking; and it aids materially in the perfect growth of the grafts to have them held in place in this way. The washing off of the grafts daily with the Thiersch solution seems to maintain their vitality better; so often have we seen them disappear or disintegrate after three or four days, as a result of the secretion that forms under the grafts."

Dr. J. M. Downey, in closing the discussion, said:

"I think Dr. Sullivan is to be congratulated in that case, because I think it is an unusual procedure to have 35 or 40 grafts to take in one sitting, also that three sittings in grafting the entire scalp is a record, I believe.

"In regard to replacing the scalp after an avulsion; in this particular case where I tried to do that operation I think I would have succeeded very much better had I followed a procedure reported here about a year ago in Surgery, Gynecology and Obstetrics. If I had made four or five incisions and divided the scalp so that it would have been equally divided and left room for drainage, rather than try to sew it on in its entirety without any drainage, and also probably perforated the outer table and the diploe, I think I would have had better success with it. That procedure would have been very much better and worthy of a trial. In a number of cases where a considerable part of the scalp has been removed, yet attached to the skull by a pedicle, I have been very successful in sewing the entire scalp without drainage and got very good union, but that was a complete avulsion, and for that reason I believe an operation of the kind already described, would be worthy of a trial."

## Decortication of Lung. Patient. Radiograph.

*J. A. Lee, M.D.*

This case possessed a considerable amount of interest to me and whether or not it will repay discussion and presentation I do not know.

On the 22nd of February, 1913, this patient was admitted to the hospital suffering from lobar pneumonia of the left lung. On March 6th, 1913, a diagnosis of empyema was made. He was operated upon March 7th, 1913. The pleura was opened in this case right underneath the scapula. The wound was drained and healed up and the child left the hospital in about six weeks—discharged April 1st. The child gave a history then for about two months after leaving the hospital of being in fairly good condition and on November 27th, 1913, he was re-admitted to the hospital on the medical side, once more suffering from pain and temperature and fever and evidences of a re-infection in his pleural cavity. The site of the wound was re-opened and drained and he left the hospital with a discharging sinus. The sinus continued to discharge until he was re-admitted to the hospital on May 19th, 1914, when he came in my service. At that time we tried various methods to see if we couldn't cure up this sinus. We injected bismuth paste, etc., with no result and I will show you in a minute why we had no result.

While working on this case my attention was drawn to an article in the June issue of the *Annals of Surgery* by Mayo and Beckmann, in which they call attention to decortication of the lung and spoke in a very high manner of the original work by Fowler in 1893 and pointed out the value of the procedure and also that his work in this particular line seems to have been neglected.

Feeling the case was suitable for this procedure, I made, in the first place, an incision in the most dependant portion of the pleural cavity and cutting in off that, drained the lower portion of the pleural cavity very freely. The upper wound healed, but we couldn't get the discharging sinus to close up. I tried various things, vaccines and iodin injections, etc., but did not get any satisfactory results, although we got a certain amount of lung expansion. Previous to the operation, the lung expanded very little below the primary incision. Then on July 31st, I made the incision which you see, making a sort of a horseshoe incision, opening up the skin and muscle and cutting down on to the ribs and resected them practically from here to here and turned up that flap.

The pathology in this case was interesting to me and points out why many of these cases do not cure up and, to my mind, the reason they do not heal up is that you do not get complete lung expansion and if you prevent that you prevent a satisfactory healing. Now, we found a large number of adhesions in through here and the lung practically expanded only down as far as here, and then a very thin band of lung tissue. Most of the lung was up in here. We found a thickened viscera that had all the appearance of a thick abscess wall, had absolutely the same thickened appearance of an abscess wall, and in between here this thickened abscess wall extended from this upper point here down to the inner portion of the pleural cavity and all this outer space in a sort of a triangle, having this as the apex of the triangle and this the base in here. All this space here was an abscess cavity. I broke up the adhesions and got my hand up in here and got hold of the tip of the large thickened pleura and pulled it down and cut it off and I was enabled to see something which the Mayos discuss in their paper and that is, right on the table, the lung, like a slowly-unwinding snake, came right down and occupied the full extent of the cavity. I put a drain in and sewed him up and while he had considerable shock and went pretty bad on the table and had a stormy convalescence for three or four days, he cleared up and has remained practically well now for about three or four weeks. This is all granulation tissue here and there has been no discharge at all. X-ray examination shows that we have not quite as much lung tissue here. That is the affected side and this is the right side showing a complete lung filled with air. We have not quite as much lung substance here as we would like, but if you listen to the breath sounds over this structure here, you will find that he is using pretty nearly all of that lung.

I think we are going to get a cure in this particular case.

# TRANSACTIONS OF THE BROOKLYN SOCIETY OF INTERNAL MEDICINE.

*Regular Meeting, October 23, 1914.*

The President, Dr. H. W. Lincoln, in the Chair.

## The Diagnostics of Internal Medicine.

*Dr. Joshua M. Van Cott.*

(For paper see p. 177.)

Dr. Thomas A. McGordrick, in opening the discussion said:—There is very little I would add to such a subject by Dr. Van Cott, except a word of congratulation and almost envy of the feelings which the doctor must possess.

Particularly appropriate is the paper, when only a few evenings ago in this building, contrast was made of laboratory and clinical surgical methods and findings, and the statement that when contradictory there should be *entire* disregard of the laboratory.

My vote of congratulation is sounded because the paper of the evening shows how important the laboratory is today to the Diagnostics of Internal Medicine, an importance proclaimed by the reader for so many years. It is only fifteen or twenty years ago that it seemed as if most of the medical journals were given to surgical matters and that medical reports were of little value and given scant attention. Still, during all this time, the relation of abnormal functions to structural change, the search for definite etiology, and *exactness* in everything, were taught so earnestly, and the value of the knowledge to be gained shown so strikingly, that today, in the diseases of nearly every system of the body, the laboratory gives wonderful assistance—in digestive disorders, in respiratory diseases, in the use of the X-ray, in the study of early kidney changes and so many others.

Upon the laboratory must every hospital depend for a great measure of its success in its work. It is in appreciation of this fact that England, today, under its medical act, is discussing the erection of laboratories throughout the country—small ones in the towns connected with larger and better equipped ones in the cities, so that the poorest people may receive all the advantages.

Recognition by Governments, and by Hospitals, of the value of this work, to say nothing of the value we place on it as practitioners should be, I feel, a cause for congratulation and a source of happiness to the doctor and teacher of this work.

Dr. Edward E. Cornwall, in discussion, said:—I have listened with great pleasure to Dr. Van Cott's interesting and scholarly paper. He has emphasized the fact that in one department, at least, medicine has become a science. Diagnosis, thanks largely to the wonderful work of the pathologists and laboratory investigators, has accumulated so many facts that its scientific pretensions can not be gainsaid. When we talk about scientific medicine we proudly push forward diagnosis as the worthiest representative. In fact, diagnosis has so far outstripped treatment, that it is in danger of being relatively overestimated; and the specialist in internal medicine, attracted by the superior scientific development of diagnosis, seems often to show a tendency to confine his activities largely to diagnosis, to the detriment of treatment; which is equally deserving of his attention, though it is yet a long way behind diagnosis, being hampered by tradition and prejudice, and waiting for physiology to light the way for its advance. When we compare the diagnostic facilities of the present time with those of only a generation ago, it makes us realize how fortunate we are to be practicing medicine now instead of then. What would we do without the laboratory now? Yet many of us can remember when we had to make diagnosis without blood examinations and blood cultures and complicated biological reactions; and there are physicians now living and practicing who can remember when diagnosis by identification of the pathogenic germ or by microscopical study of a sample of the diseased tissue was scarcely dreamed of. Diagnosis has become now in many cases beautifully easy as well as positive; as in the following example: A man who complained of vague and mysterious symptoms for a year or more was recently sent to me for diagnosis. I sent a specimen of his blood to a pathologist, who reported 450,000 white blood cells, 40 per cent of which were myelocytes. The diagnosis and prognosis were thus promptly and absolutely made.

Laboratory diagnosis is positive because it is deductive, but it is positive only so far as the individual deductions can reach, and it does not yet cover the whole field; there remains a large part of the field to be covered by induction. Formerly induction was almost the only method available, and when we consider the imperfect knowledge of pathological conditions formerly held, we must admire the work of some of the great physicians of former times. In every age there have been a few great geniuses in medicine who by sheer mental power and insight were able to make remarkably correct inductions from a comparatively small number of observed facts. And here is suggested this danger for us: that we become too dependent for our diagnosis on the laboratory, (which with all its wonderful capabilities is not absolutely infallible even within its acknowledged field), and in consequence fail to develop properly our powers of induction. It is temptingly easy to order the pathological examinations to be made and then to sit back and smoke our pipe until we get the returns before making the diagnosis. But if we yield too much to this temptation our inductive faculty is liable to atrophy.

Dr. Van Cott:—I have nothing further to say excepting these things: It was a pleasure to hear Dr. Goldrick speak of the desirability of having public laboratories in sufficient number to meet the needs of the physician and the public. During my first incumbency as chairman of the Public Health Committee of the State Society, we mapped out the whole state for diagnostic laboratories; and presented a resolution at the annual meeting urging the legislature to provide them; but we were obstructed by politics and failed of success.

I agree to an extent with Dr. Cornwall, when he says that we can depend too much on special diagnostic methods to the neglect of fundamental pathological knowledge. We should all have a good anatomy and a good pathology with colored plates; and we should make it a daily rule to read something in pathology. I think the time will come when the inductive method will be possible to us all. Personally I see cases often which do not get to the laboratory, because the general pathological findings are sufficient for a diagnosis, and the patient is spared the fee necessary for special work. A case occurring this summer perhaps illustrates the idea. A young woman had an attack of lobar pneumonia, involving the base of the right lower lobe posteriorly. She came to her crisis on the eleventh day, the temperature falling to normal. On the thirteenth day it began to rise and assumed more of a septic character. Auscultation and percussion revealed nothing excepting consolidation. A needle puncture brought a small amount of clear serum. The case grew worse, and a tentative diagnosis of apostematous pneumonia was made. For three weeks the physical signs remained the same. At the end of the fourth week deep puncture brought pus from what was evidently an abscess of the lung, which had failed to open into a bronchial tube and was located near the inferior part of the hilum. No amount of blood analyses could have discovered more than the presence of sepsis. A diagnosis in such a case can only be made when one has good mental pictures in pathology to depend upon. Then and then only is the inductive method available.

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

MAY, 1915

## MEDICAL SOCIETY OF THE COUNTY OF KINGS.

### MINUTES OF STATED MEETING, APRIL 20, 1915.

The President, Dr. Russell S. Fowler, in the chair.

There were about 350 present. The meeting was called to order at 8:40 p. m., and the minutes of the previous meeting were read and approved.

### *Report of Council.*

The Council reported favorably upon the following applications for membership:

Wm. Henry Cook, 749 Bedford Ave.; L. I .C. H., 1912; proposed by E. L. Schaefer; seconded by C. Fulda; Feb. '15.

George G. Fisher, 231 Hancock St.; Laval Univ., 1906; proposed by E. J. McEntee; seconded by J. C. Kennedy; Feb. '15.

Henry S. Friedland, 319 Lorimer St.; L. I. C. H., 1907; proposed by E. L. Schaefer; seconded by Membership Committee; Mar. '15.

Daniel M. McCarthy, 359 Rugby Road; Queen's Univ., 1903; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Thomas M. Reid, Jr., 104 Pioneer St.; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee; Mar. '15.

Daniel R. Robert, 261 Hicks St.; P. & S., N. Y., 1911; proposed by W. H. Rankin; seconded by H. A. Fairbairn; Mar. '15.

Esmonde B. Smith, 827 President St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee; Feb. '15.

Cornelius A. Schmid, 370½ Pacific St.; L. I. C. H., 1913; proposed by S. J. McNamara; seconded by Membership Committee; Feb. '15.

Irving Tran, 179 South 2d St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Max Wachsman, 429 43d St.; Albany, 1901; proposed by R. H. Pomeroy; seconded by Membership Committee; Mar. '15.

### *Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Walter J. Campbell, 384 Union St.; L. I. C. H., 1899; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

George A. Clark, 348a Ninth St.; L. I. C. H., 1898; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

Aurelius De Yoanna, 565 Henry St.; Bellevue, 1897; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

Gaetano De Yoanna, 565 Henry St.; L. I. C. H., 1908; proposed by J. J. Sheehey; seconded by Membership Commitee, Feb. '15

Henry J. Dilberger, 432 Ninth St.; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

John H. Isquith, 674 Bedford Ave.; Cornell, 1909; proposed by E. K. Tanner; seconded by N. T. Beers; Jan. '15.

Henry W. Kemp, 855 Fresh Pond Road; Univ. Toronto, 1906; proposed by L. J. J. Commiskey; seconded by Membership Committee; Jan. '15.

Nicholas J. McCaul, 278 Ninth St.; Balt. Med. Coll., 1906; proposed by J. J. Sheehey; seconded by Membership Committee; Feb. '15.

Wm. E. McCormick, 36 7th Ave.; Albany, 1911; proposed by S. H. Lutz; seconded by F. D. Bailey; Dec. '14.

Wm. Francis McKenna, 36 Clark St.; L. I. C. H., 1913; proposed by R. F. Barber; seconded by A. Murray; Jan. '15.

Anton F. Mannel, 923 Bushwick Ave; Univ. & Bell., 1914; proposed by E. L. Schaefer; seconded by C. Fulda; Feb. '15.

Abraham Ravich, 820 Nostrand Ave.; P. & S., N. Y., 1912; proposed by I. D. Kruskal; seconded by J. Linder; Jan. '15.

Wm. B. Rosecrans, 1494 Greene Ave.; Albany, 1901; proposed by R. S. Fowler; seconded by Membership Committee; Feb. '15.

Wm. Fred. Walenta, 396 Graham Ave.; L. I. C. H., 1911; proposed by R. S. Fowler; seconded by Membership Committee; Jan. '15.

Joseph F. Ward, 405 Tenth St.; Balt. Univ., 1899; proposed by J. J. Sheehey; seconded by Membership Committee; Fed. '15.

## *Applications for Membership.*

Applications for membership were received from the following:

Samuel F. Brothers, 96 New Jersey Ave.; P. & S., N. Y., 1890; proposed by W. L. Chapman; seconded by Membership Committee; Apr. '15.

Charles H. Hall, 2933 W. 16th St.; P. & S., N. Y., 1902; proposed by S. J. MacNamara; seconded by Membership Committee; Apr. '15.

Oscar J. Kahn, 78 Lawrence Ave.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15.

Wm. Lehrich, 139 Bay 17th St.; Univ. & Bell., 1908; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15

Walter W. Lowell, 432 Enfield St.; Cornell, 1911; proposed by T. C. Takami; seconded by S. J. MacNamara; Apr. '15.

Edmund H. Parizot, 467 Garfield Av., Rchd Hill; L. I. C. H., 1914; proposed by C. F. Pabst; seconded by Membership Committee; Apr. '15.

William F. Tyler, 143 Kent St.; Syracuse, 1908; proposed by F. E. Hamlin; seconded by G. D. Hamlin; Apr. '15.

Geo. D. Von Deylen, 336 E. 32d St.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15.

By order of the Council, the Secretary read the resolutions endorsing the work of Dr. Jos. J. O'Connell, as Health Officer of the Port of New York, adopted on March 10th, 1915, and printed on page 190 of the Long Island Medical Journal.

On motion by Dr. William J. Cruikshank, it was unanimously voted that the Society approve the action of its Council.

## *Scientific Session.*

Paper: "The Responsibility of the General Practitioner in the Care of Prostatic Hypertrophy." (With lantern slide demonstration.)

By Paul Monroe Pilcher, M.D.

Paper: "Gastritis." (With lantern slide demonstration.)

By Charles G. Stockton, M.D.,
Prof. of Medicine, Univ. of Buffalo.

Paper: "A Review of the Field of Tropical Medicine." (With lantern slide demonstration.)

By Arthur N. Tasker, M.D.
Capt. Med. Corps, U. S. Army,
Prof. Tropical Medicine,
Long Island College Hospital.

Meeting adjourned at 11 p. m.

Burton Harris, M.D.,
*Secretary.*

# LONG ISLAND MEDICAL JOURNAL

VOL. IX. JUNE, 1915 NO. 6

## RADIUM THERAPY. SOME CONSIDERATION OF ITS SCOPE AND UTILITY.*

Walter B. Chase, M.D., F.A.C.S.

Brooklyn-New York.

THE discovery by Professor and Madame Curie of a new element, whose properties have overthrown the long accepted atomic theory is startling and revolutionary. It marks a new era in biologic study and therapeutic research. Its occult power startles the physicist and leads the therapeutist into new fields of research and experiment; while the disappearance of malignant growths without operation or pain, and frequently without scar, is most impressive. The scarcity of standardized radium and its almost restrictive price of $120 per milligram, has so limited its production and distribution, that the number of physicians and research institutions in this great metropolitan center (and elsewhere) who possess adequate amounts of potential radium for effective use are few. While it may be affirmed that the producer of radium is a public benefactor, it is greatly to be regretted that the promised increase in its production, and diminution in price—from governmental sources—has not been realized; the fear remains that the earlier promises of its accomplishment have greatly diminished.

What may be regarded as fundamental to this discussion is quoted from my paper in the New York Medical Journal of January 15, 1915, entitled: "A Conservative Estimate of Radium Therapy from the Clinical Standpoint."

> Page 64. "The law of reaction is the governing factor in its use, and only by mastery of this art can success be attained. It is assumed that a given amount of radium applied at the same distance, with the same screening, will produce the same results, if the tissues to which is applied, normal or malignant, possess the same resistance. When lack of uniformity in curative results is found the inference is unmistakable that the individual resistance of the patient's tissues is one of the controlling factors in radium therapy."
>
> Failure of large doses to cure certain cases of malignant growths and success with relatively small amounts in curing other cases, is well authenticated. Results substantiating this theory in cases 3 and 4, in the same number of the New York Medical Journal, in reciprocity work in St. Vincent's Hospital, between Dr. J. B. Bissell and myself; in the apparent cure of two cases of sarcoma (one of the femur and hip) by unusually small doses (40 mgms. radium) while in a case of recurrent sarcoma of the abdominal wall last summer and fall, at Trinity Hospital, at Long Island College Hospital and privately in carcinoma, with dosage from 50 to 150 mgms. no lasting curative or inhibitive results followed.

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* Read before the Brooklyn Pathological Society, May 20, 1915.

Another fundamental proposition requiring preliminary mention is that surgery and radium are not in their sphere and use incompatible with each other, and that they are largely supplemental and reciprocal in their application. Large operable cancers belong to the domain of surgery, but while surgery deals with operable cases radium knows no such limitation. The inoperable unfortunates are entitled to all the relief radium can offer even though it might promise only palliation; it does comfort the crushed spirit to hope for the amelioration of mental suffering and physical pain.

Owing to the conservative attitude of the Radium Institute of London, with its splendid equipment, probably no more suggestive and authoritative statement has appeared than the following; in its annual report for the year 1914 on prophylactic radiation, it says:

> "Since the opening of the Institute in August, 1911, numerous patients who have undergone operation for malignant disease have received post-operative prophylactic irradiation. It would be exceedingly difficult, if not impossible to make any statement as to the precise value of radium treatment on preventing or minimising the danger of recurrence, but as the majority of these patients had suffered from severe and extensive and rapidly progressive malignant disease, and the operator had expressed grave doubt of the possibility of remaining free from the disease for more than a few months, the relatively slight proportion of recurrences so far recorded (19 per cent) does much to justify the routine post-operative irradiation. It should prove of special service in those malignant growths in which it has been found impossible to operate well beyond the appreciable area of the disease."

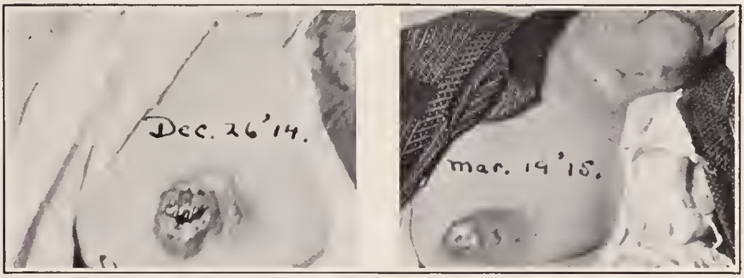
The number of patients applying for treatment at the radium institute in London in 1914 was 841—aggregating since its opening a very large number. The relation this report bears to prophylactic irradiation is gratifying to a class of patients heretofore regarded a practically hopeless.

The art of rightly applying radium is acquired only by close observation and differentiation for each individual case, while the quantity and potentiality of radium used must be governed by practical knowledge and accurate interpretation of clinical results. The influence of radium to injure as well as to benefit the patient must be remembered. The fact must be recognized that small doses will overstimulate and not destroy malignant tissue. Too large doses will destroy not only malignant tissue but normal structures contiguous thereto. This latter fact was strikingly demonstrated in von Eiselberg's cancer clinic in Vienna—and reported by Sparman, his assistant, in the Archives of Surgery in November, 1914. To avoid the liability of overstimulation and malignant recurrence after operation, the surgeon should in his judgment apply sufficient dosage to eliminate the risk, while equal care should be exercised not to destroy tumor growths and adjacent normal structures as was done in the Vienna clinic referred to. In post operative radiation after the Wertheim operation, the amount of radium applied should not exceed fifty mgms. on account of the trophic disturbance following extensive dissection. Finally it may be affirmed that early recurrence following operation is suggestive of a type of malignancy difficult to control. The power of radium used before and after surgical operation in promoting decongestion and stimulating absorption of non-malignant inflammatory exudates, and the destruction of contiguous but unknown areas of malignant cells, is becoming more generally accepted and adopted. A case of this type has recently come under my observation. Unfortunately the post operative and prophylactic application of radium is too often deferred until recurrence appears. The maximum of usefulness comes from its application directly subsequent to the operative procedure, by its power to destroy areas of malignant cells, whose location is unknown and unknowable.

I have used it as routine treatment for ten years after nearly all my operations for malignant tumors. The period of time radium should be applied is a matter of judgment, but it varies from five minutes to several days. When buried in the tissues or placed in closed cavities as in the vagina for uterine cancer, I have applied it for a period of ninety-six hours.

To secure the highest efficiency for malignant areas it is needful when practicable to employ cross fire, by applying the radium in divided doses at several points or on opposing surfaces of the tumor when practicable, or both and by burying it in the tissues; thereby augmenting its power by more effective concentration, and deeper penetration of the gamma rays, which represent the potentiality of radium therapy.

I present the results in two cases of epithelioma. A record of the first case, No. V., was published in the International Journal of Surgery, 1914, St. Vincent's Hospital reports, by Dr. Bissell, in which we jointly associated in radium work. J. S., farmer, was seen first March 22, 1914. The history was that of a small mass appearing twelve years ago in front of the right ear, but did not break down until about a year ago. This was followed by rapid ulceration. On admission he had an extensive and deep ulceration running from the base of the right ear and down the neck to about the level of the hyoid bone, and was about two inches wide. The edges were undermined and bled freely to the touch, and were exceedingly painful, with sero-purulent discharge and disagreeable odor. March 31 the ulcer was thoroughly cauterized and specimen examined by pathologist and declared basel celled epithelioma. April 3 the ulceration appeared to be extending again, and the slough exposed to view the deep vessels of the neck. It was decided that further operative interference was unadvisable, and forty mgms. were applied to the ulcer for nine hours. At the end of ten days a totally different picture was seen. The ulceration was reduced to about one-half its former size. Forty mgms. of radium were again applied for eight hours. On April 23 the wound was dressed for the last time, the ulcer had practically disappeared and the man left for his home to go to work.



Before Use of Radium. After Use of Radium.

Second case, (mammary epithelioma). Mrs. R., widow, aged 80 years, a patient of Dr. Brundage, came under my care December 22, 1914, for epithelioma of the right breast, nipple and subjacent structures destroyed, with ulcer one and one-fourth inches in diameter, which was of two years' standing. When treatment was begun she was confined to her bed by subacute bronchitis and exhausted by troublesome cough. Up to March 6 she had received at intervals 550 mgm. hours of radium treatment—the ulcer was healed—a little induration remained at the upper and inner quadrant of the breast due to scar following mammary abscess in her early married life, and fibrosis of the mammary gland indicates freedom from maligmary. A section was taken for pathological examination by Dr. J. Richard Taylor, who confirmed the diagnosis. Added interest attaches to this case from the fact it was seen and treated before metastasis appeared. At this time, May 15, she is in excellent health.

Case No. 3: Charles Higbie, aged 52, melanotic sarcoma, (cutaneous), came under my treatment at the Trinity Hospital, December, 1914, involving dorsal aspect of right forearm at junction of middle and lower third. He had just recovered from a long attack of septicemia following infection due to crushing injury of middle finger of righ hand, resulting in amputation of finger by Dr. Campbell. In December last, prior to leaving the hospital there was a dark pregmented cutaneous area about one-half by two inches, where appeared a small growth which Dr. Campbell had removed surgically, but which refused to heal. Radium was applied three times within a period of a few days and healing was complete. I saw him on May 12 and there was no change in the appearance of the arm. In the operation a portion of the discolored area was not removed. It was regretted that a histological examination of the tissue removed was not made as the specimen was lost. Clinical diagnosis was made by Dr. Winfield.

Case No. 4, showing the utility of radium as a substitute for surgical operation. Miss G., aged 25, entered my service at the Bethany Deaconess' Hospital, September, 1913, for removal of cervical tubercular glands, for uncontrollable cough resulting from pressure on recurrent laryngial nerve. Being deeply located behind the deep vessels of the neck and the pneumogastric nerve, needed elevation for the enucleation was attended with arrest of respiration, making the steps of the operation difficult and hazardous. For thirteen months she remained in perfect health. She returned in October, 1914, with another tubercular gland in the same location with exactly the same symptoms. Radium treatment began October 24, 1914, and was continued at intervals until February 4, 1915, during which time 2,840 mgm. hours of radium treatment were applied. The gland was altogether irresponsive to radium treatment until the radium was applied from ten to seventeen hours. The gland had almost entirely disappeared. At this writing, May 15, she coughs slightly and very infrequently, no adjacent swelling, and hope is established of cure. Presumably this gland has not undergone caseation as was the one removed.

Radium as a Depilatory. Mrs. ———, wife of a physician, applied for treatment for tufts of hair on both angles of the chin on a vertical line with the outer angles of the mouth; a few applications of radium removed the hair on one side. It will now be applied on the other side.

A mistaken but prevalent belief obtains, that only and principally the efficacy of radium resides in its curative properties. With this curative property, it has a large field of usefulness in its palliative power.

Without going into detail I wish to record my experience in palliative results used in advanced and frequently hopeless gynaecological cases of cervical and uterine cancer. The first influence noticeable is its analgesic power—in the diminution or subsidence of pain and lessening of fetor and discharge. Coincident with this I have witnessed (particularly after thermo-cautery operation) a partial and in one case a complete subsidence of cachexia with return of appetite and renewed strength, for a period of several months. Among unpublished cases is a recent one belonging to the class last mentioned, whereby under the application of radium once or twice a week, the troublesome and persistent pain almost disappeared for a period of three and one-half months preceding the fatal termination. The relief of suffering save by opiates, which often disturb and perturb the sensorium, affords a greater or less measure of relief unattainable by any other procedure. This analgesic property of radium in a variety of hopeless cases has produced for a month or two previous to the end partial or complete freedom from pain.

To establish a correct estimate of both its curative and palliative properties the writer knows no more efficient method than to include herewith an abstract of the report of the London Radium Institute for the year 1914, noted for its moderate and conservative estimates on radium therapy. In its directorate are some of the most eminent scientists and surgeons of Great Britain. Its careful perusal is urged on your attention. For its correct appreciation it is necessary to state that the cases treated in this institution were in no instance selected. None had been refused but those who were practically moribund, or in cases in which radium therapy was manifestly unsuitable. No examples of operable malignant growths (rodent ulcer alone excepted) had been treated otherwise except those in which operation had been unjustifiable or in which operation had been absolutely declined by the patient.

## APPENDIX.

Abstract of annual report for 1914 of the London Radium Institute:

Carcinoma of the uterus continues to yield most gratifying results and the effect of radium in inoperable cases are far in advance of those obtained by any other known medical or surgical methods. The local manifestations of this disease are benefited in the most striking manner, and the complete disappearance of fungating growths, arrest of hemorrhage and discharge, healing and ulceration, and relief from pain are of frequent occurrence. Reports of four cases are cited, two of which were recurrent, following abdominal hysterectomy. As previously stated great care must be exercised in the treatment of recurrences which make their appearances within six months after the performance of a Wertheim operation, owing to impairment of trophic nerves. In the first case ulceration and induration disappeared, and the patient since that time has remained well. In the second case ulceration healed and patient regained health with increase of weight. In the two non-recurrent cases, both inoperable, the first after intervals of radium treatment from December, 1913, to May 20, 1914, vaginal discharge ceased and bladder symptoms disappeared, she gained weight and was in good health. The other case was not cured but resulting fibrosis has seemingly arrested the disease.

*Cancer of the Breast:* More cases appear for treatment than any other form of the disease. Treatment declined in all operable cases, unless patient has refused to submit to operation, when radium is used as a last resort. The progress of slow inoperable cases of the atrophic type is usually much retarded by radium. In rapidly growing cancer of the medullary type radium is not effective save to relieve pain. Nine cases reported, all but one recurrent. In six of the recurrent cases treated by radium for various periods of time there was substantial disappearance of the disease and practical restoration of health. One other had freedom from pain, gain in weight, able to enjoy life and attend social functions. In another general health improved, all superficial ulceration healed (deeper ulcers improving) gaining in weight and in better health than for years. The last, while some small glands remained enlarged the patient's health was good.

*Cancer of Bladder:* Six cases have been treated and in most instances the results have been gratifying. The hematuria, cystitis and all subjective symptoms have disappeared, and cystoscopic examination has shown the size of the growth has been lessened and many ulcerative surfaces have been covered by healthy epithelium.

*Carcinoma of the Rectum:* The adoption of radium therapy in inoperable cases is usually justified by the results obtained. The soft, annular and vascular type of growth is much more affected than the fat, hard, non-annular type. Growths situated in the upper half of the rectum appear to be more amenable than those in the lower half.

*Carcinoma of Prostate:* The number of cases has not been large but benefit has been noted in all of them.

*Rodent Ulcer* is most amenable to radium treatment of all malignant diseases.

*Sarcomata:* In general, if these growths are taken in the early stage before dissemination they do very well under radium treatment. The burying of tubes of radium salt or radium emanation should be resorted to when practicable. Vigorous treatment should be given on account of their vascularity and their rapid and wide dissemination by blood currents.

*Lymph-adenoma:* The most startling features in treatment of this disease by radium is the rapidity with which the size of the affected glands is diminished, the effect being often clearly perceptible to the patients themselves within one week.

*Fibroid Disease of the Uterus:* Radium exerts a most beneficial action upon the distressing symptoms of menorrhagia and metrorrhagia, which are the almost invariable concomitants of this condition. The total exposure should be between thirty and sixty hours, spread over five days, and the series repeated after six weeks. Radium used in two cases fifty to one hundred mgms. The first effect noted is the checking of the metrorrhagia, and this is followed by progressive decrease of the menorrhagia, until the flow becomes normal or ceases altogether.

*Nevi:* Flat, superficial, capillary and port wine stains, will probably be satisfactory if blanching is readily effected by pressure. Patience and caution must be exercised in superficial nevi, as excessive doses may result in troublesome telangiectasis. Cavernous nevi do exceedingly well under radium, especially when cross-fire is possible. Five cases of nevi gave favorable results.

*Warts and Papillomata:* Yield readily to half strength apparatus unscreened, from thirty minutes to two hours' duration.

*Angio-neurotic Edema:* Three patients suffering from this condition have been treated during 1914. In one case a cure has apparently been effected; in the two others considerable benefit has been obtained.

*Arthritis Deformans:* The daily administration of two hundred and fifty cc. radium emanation solution of a strength not less than one millicurie per litre, to patients suffering from this obstinate, painful and crippling disease, is sometimes attended by very remarkable results.

*Keloids* continue to give most excellent results when treated with radium; and a great improvement, if not complete cure, can be safely predicted when the condition is of recent origin and when it occurs in young subjects.

*Splenic Lukemia:* One case reported, spleen reaching to left iliac fossa, with extreme lucocytosis, where relief with ability to resume household duties resulted from radium treatment in large dosage.

*Lupus Erythematosus:* In early cases which have not been subjected to much other treatment, one or two exposures not exceeding one hour with half strength apparatus, may suffice to bring about disappearance of the lesion.

*Pruritus:* The analgesic effect of radium is often of greater use in producing relief than by any other measure. It is efficacious in pruritus ani.

*Tuberculosis of Glands:* In cases where surgical operations have been declined for cosmetic reasons radium often proves of considerable value. Heavily screened exposures of twenty or more hours' duration should be resorted to and an effort made to secure cross-fire when practicable. If the glands are caseating radium is of very little use. One case of tubercular cervical glands and one of chronic lymphangitis at angle of right jaw reports show satisfactory results.

While making no general summary of this paper, certain conclusions are worthy of special mention.

First; That the scope of radium therapy is not confined to the cure of malignant disease, but as well to its palliative power in ever-increasing ratio as its value is demonstrated.

Second; That in its most effective application the utility of cross-fire when possible must be insisted on either by application on opposite surfaces if accessible, or when exigency demands by its being buried within malignant areas. This secures deeper and wider areas of penetration than by any other form of application. That preoperative, post operative and prophylactic radiation have a wide field of usefulness, both curative and palliative, anticipating and supplementing surgical procedure, and in certain conditions holding the field as the one agent for cure or palliation.

Third; That the analgesic influence of radium in a variety of painful conditions, not always malignant, is one of its most precious and valuable properties. This analgesia is pronounced in neuritis and chronic rheumatic arthritis. This is frequently witnessed in hopeless malignancy, allaying pain without the use of perturbing opiates, which not infrequently cause painful psychic phenomena.

Fourth; Finally, as in surgery, so in radium therapy, a conservative attitude should be taken concerning promises of results for some disappointments are inevitable.

# TUBERCULOSIS AS A SOCIAL DISEASE.*

**S. Adolphus Knopf, M.D.,**
New York City

IN spite of all our efforts, we are still losing about 200,000 people annually from tuberculosis in the United States, of which I venture to say, 50,000 are children. Estimating the average duration of life of 50,000 children who die annually from tuberculosis in the United States at about seven and one-half years, and figuring the cost to parents and the community for each life as only $200 per annum, the financial loss thus represented is $75,000,000. These children have died before they have been able to give any return to their parents and the community. What a useless sacrifice of life and of money! How much needless sorrow and heartaches caused to parents!

Besides all this, many a tuberculous mother has had her life shortened because she bore one of these children. According to the report of the Commissioner of Education, there are at this time about 20,000,000 children attending public schools in the United States. Placing the proportion of tuberculosis among them as low as only three per cent would make 600,000 children afflicted with tuberculosis who are at this time in urgent need of open-air instruction or sanatorium treatment. According to available statistics, we can at present provide instruction in open air classes for about 2,000 tuberculous children. The anemic, the nervous, and the children suffering from cardiac diseases, who are in equally great need of outdoor instruction, are not included in the three per cent.

The 150,000 adults who die annually of tuberculosis have at the average been ill and incapacitated for work for at least two years, and figuring their cost to the commonwealth (either to municipality or individual family) at only $1,000 per year, would mean $300,000,000 uselessly spent in caring for people afflicted with a disease that might have been prevented and cured. Of these 150,000 adults, a large number have been married and in many instances leave either widow or orphans depending upon public support. The annual maintenance of these widows and orphans must, of course, also run into the millions. We have thus an annual expenditure of well-nigh $400,000,000. Yet this by no means represents all the actual loss to the community from tuberculosis. Our social economists tell us that between the ages of 16 and 45 every adult life with an average earning capacity represents an asset of $5,000 to the community. Now, as two-thirds of all deaths from tuberculosis in adults occur between these ages, we have an additional loss of $500,000,000. Thus, the actual direct and indirect loss caused by death from tuberculosis in the United States amounts annually to something like $900,000,000, and this amount we spend on a preventable and curable disease!

We must also bear in mind the fact that we have at least eight times 200,000 tuberculous adults, for it is well known that for every individual who dies of tuberculosis there are eight living with the disease, still up and about, and the majority of them with an opportunity of spreading infection. Besides these, there are about 400,000 tuberculous children. By reason of lack of open-air schools, preventoria, sanatoria, special hospitals, and horticultural, agricultural, and industrial colonies, the vast majority of these 2,000,000 tuberculous individuals continue the chain of infection and keep up our fearful morbidity and mortality at an expense of $900,000,000 per annum.

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* Address delivered by invitation before the 51st regular meeting of the Associated Physicians of Long Island, at Brooklyn, N. Y., Jan. 30, 1915.

Where do those tuberculous adults and children come from? Our first thought is of course of tuberculous children as coming from tuberculous parents and we wish at once to make regulations restricting the acutely tuberculous from entering marriage relations. You have probably all heard of the recent decision of Supreme Court Justice Blanchard of Manhattan annuling the marriage between Sarah and Joseph Sobol because the latter was suffering from an "incurable attack of tuberculosis." Let me say right here that I agree most emphatically with the wise decision of Justice Blanchard. If a man knowing that he is tuberculous and in a stage when he can transmit the disease, deceives his prospective bride by pretending to be in normal health, he commits a crime by entering into a marriage relation, and the annulment of such a marriage is absolutely justified.

If, on the other hand, one of the married couple, either husband or wife, develops the disease in the course of the married life, submits himself or herself to proper treatment and training, observes the precautions necessary to avoid transmitting the disease to others, and carries out the preventive measures conscientiously, it would be, to my mind, inhumane and incredibly cruel to encourage the lawful separation of such a couple.

The honest, conscientious consumptive is no more dangerous to associate with than any well person, and if it is true that a certain doctor of New York City, when commenting on Judge Blanchard's decision, said, as was reported in a recent article of the New York Times, that "no person should live in daily contact with a consumptive," he is helping to spread an unnecessary and exaggerated fear of the presence of a tuberculous patient, which fear we call phthisiophobia. I do not know what this doctor's personal experience had been, but I have labored for more than a quarter of a century among consumptives as interne and attending physician in hospitals and sanatoria and have been and am in daily contact with this class of sufferers in consultation practice. The precautions taken in tuberculosis institutions to prevent contracting the disease are so simple and yet so effective when they are vigorously carried out, that communicating the disease is virtually impossible. These precautions, I believe, have protected me up to this time in spite of my daily contact with consumptives. It is one of the rarest occurrences that physicians or nurses in tuberculosis hospitals and sanatoria become tuberculous, though in daily contact with the disease. Thus, we may justly say that the safest place not to contract tuberculosis is a well-equipped and well-managed institution for the treatment and care of consumptives (hospital or sanatorium).

Many of our most distinguished physicians at the head of sanatoria have been or still are tuberculous, but are able to work and do an infinite amount of good through their personal knowledge of the disease and their devotion to the cause. Nearly all of them are married, and I know from personal acquaintance and friendship with those physicians that they are happy and contented in their labors and in their family life. It is not unlikely, however, that among the million and a half tuberculous individuals living in the United States, many of whom are married, there are some perhaps heartless men and women who would welcome a separation from the unfortunate tuberculous partner if the decision of Justice Blanchard would be interpreted to apply to all cases of existing tuberculosis in husband or wife. It would indeed be most unfortunate if the latter were the case, but I hope that no such interpretation of the wise justice's decision can ever be given.

Another statement in the Times article, which occasioned so much comment in medical and lay circles, was the following: "A most interesting thing about tuberculosis is that if one parent is normal and the other is suffering from the trouble, the children are less likely to contract the disease than in cases where both parents are normal." I do not know how the writer came to this conclusion, but by making it public he encourages the marriage of an actually ill tuberculous partner to a healthy one in order to have a non-tuberculous race. There is, however, no evidence at all for the accuracy of this statement. It is true that direct hereditary tuberculosis is so extremely rare that we never take it into consideration, but on the other hand, we know that a goodly number of tuberculous parents, particularly the mothers, transmit to their offspring a physiological poverty or predisposition to the disease, and if the child is then exposed to the disease by close contact with the mother or other tuberculous individuals, by reason of its predisposition it contracts tuberculosis more readily than in cases where both parents are "normal."

The reason why more people do not have tuberculosis in spite of the prevalence of the tuberculosis germ is because of an immunity acquired not through heredity but by living a natural, healthy life. We do not know whether or not an accidental inhalation or ingestion of a certain number of tubercle bacilli adds to this natural immunity in the healthy man. We are so uncertain about this that I would strongly caution against taking in living tubercle bacilli, no matter how few, in the hope of getting immune. We have not yet been able to produce tuberculous immunity in animals, much less in man. Thus, all in all, I consider the statements above referred to on the subject of marriage of the tuberculous, immunity against tuberculosis, and the danger supposed to exist to a person living in daily contact with a tuberculous sufferer not only unscientific but most unfortunate.

The best we can do is to teach our patients not to marry when they are tuberculous, and when married and tuberculous not to procreate children. Also we can encourage our legislatures in their efforts to allow marriage licenses to be issued only to the physically fit and those free from active tuberculosis.

As long as we do not know how to render any one immune from tuberculosis, let us teach the masses how to highten the natural resistance to the invasion of the disease. This is after all the best immunity. Popular education is the one great thing to be constantly agitated if we wish to combat tuberculosis as a social disease.

There is no doubt that many tuberculous individuals come to us through immigration, and though once an immigrant myself and deeply grateful for all that this hospitable land has done for me, I nevertheless maintain that it is absolutely just for any government to refuse to be burdened with the tuberculous poor of another country. Instead of returning the tuberculous immigrant we should prevent him from coming and so save him hardships and disappointments. Although a large number of tuberculous immigrants are returned, very many of them pass unnoticed. It is no reflection on the ability of the medical men on Ellis Island when I say that they do not by any means detect all the tuberculous invalids, and that they diagnose only those who show very strong outward signs of the disease. How should the men stationed at Ellis Island be able to detect at a glance a tuberculous invalid in a first or second stage, when it often takes an expert a half to three-quarters of an hour before he can arrive at a definite conclusion, and that after a careful examination in the quiet of his office?

The examining physicians on Ellis Island, because there are only a small number of them, can devote but very few minutes to each of the thousands of immigrants who pass before them weekly for inspection. The excellent appearance of some tuberculous immigrants. because of a ten days' voyage, invigorating sea air, good food and rest, has been to my mind in many instances the reason why invalids in quite advanced stages have passed undetected. When they have been admitted to this country, a few weeks of hard work in the ditches or in the sweatshops, with nights spent in overcrowded tenements or unclean or crowded lodging-houses, usually suffice to bring about an exacerbation of the disease. The strain, the struggle for life, the new environments, the unaccustomed food, and perhaps also some nostalgia and disappointment, likewise help in a very short time to turn an incipient case into an invalid with open tuberculosis, and thus a new center of infection is formed. All this accounts for the great prevalence of tuberculosis among the laboring classes who have come to us from foreign shores only relatively recently. A goodly number of them return to their native land, particularly the Italians, when they realize that their disease does not permit them to struggle as they must if they wish to remain here. I have been told that there are villages in Italy where tuberculosis has become most prevalent because of the return of those emigrants and because their methods of life result in infection of others.

Some return voluntarily to their native homes, but you perhaps are not aware that we have a deportation law,* which, as a good American, I am sorry to admit. seems unnecessarily harsh and unjustified, founded as it is on an unscientific basis. It is to the effect that any immigrant who has become a public charge in a hospital or other institution and is found to be tuberculous, can be deported even after a residence of three years if in the opinion of the examining physician he had contracted the disease prior to his landing on these shores. During the year 1911, about 1,500 of such tuberculous aliens were referred to the State Board of Charities for deportation. On the strength of this law the deportation is done at state expense.

With all due respect to the framers of this law, I believe it absolutely impossible for the most skilled diagnostician, upon examination of a tuberculous chest, to state the duration of the disease with even approximate certainty. A declaration that an individual had tuberculosis for a definite period of time, based on a physical examination or even on the history given by the patient, must necessarily be guesswork. I know of a case of deportation which was declared legal upon the statement of a young physician to whom a tuberculous patient had admitted that he remembered having had a cough a little less than three years ago. prior to his coming to this country.

How many thousands of us have a latent tuberculosis which has never been discovered and which may never cause us any trouble if we continue to live carefully and hygienically! Should we, however, be submitted suddenly to a life of hard physical struggle, be transported into unhygienic environments, be underfed and badly housed, the development of the tuberculous trouble would be almost certain to take place, and in a much shorter time than three years. One must have witnessed such a deportation in order to comprehend its meaning, particularly when one is not at all certain that the case might not be one which developed right here because of hard work and privation.

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* Immigration Act of February 20, 1907.

And now, to the most important question of all: what can be done to prevent tuberculous invalids, likely to become a burden to the community, from entering the United States, only perhaps to be deported after a sojourn of one, two or three years? Tuberculosis must be considered a world problem, a problem for every civilized nation. Let European governments understand that they must take care of their own tuberculous people as we take care of ours, and that in the end, by united efforts, it may be possible to conquer the white plague in all countries.

Every prospective emigrant should be examined to ascertain his freedom from tuberculosis by two competent medical men, one appointed by his home government and one by the steamship company which is to transport him to these shores. A certificate showing freedom from tuberculosis, signed by these two medical men, should be in the possession of every emigrant wishing to come to these shores. An individual discovered to be afflicted with this disease should be returned to the care of the authorities of the city or village from which he came with the diagnosis and recommendation for treatment. Exceptions can and should be made in the case of an individual with ample means who is simply visiting, or seeking to recuperate his health by a change of climate, or desirous to enter an American sanatorium for treatment. To avoid misuse or fraudulent use of the physician's certificate, a photograph should be taken at the time of the examination in the home port and attached to the certificate. Or, since a photograph could be removed and another one substituted on the certificate, I even go so far as to suggest that it would be well to have the finger-print taken for identification. This is the most accurate and scientific method known for such purposes.

The laws relating to deportation should be changed to the effect that if the holder of any such certificate, or any immigrant develops tuberculosis within six months to one year from the date of his arrival here and becomes a charge to the community, he shall be deported to the port whence he came. The expenses for this deportation should be borne by the steamship company who brought the immigrant to our shores and not by the State Board of Charities. Whether, to avoid possible mistakes in diagnosis, European governments in cooperation with the steamship companies, should desire to keep doubtful cases under observation for a few weeks, or increase the examining boards by one or two more experienced diagnosticians, is a matter for the foreign governments to decide. There is no question but that the more careful these examinations are at the ports, the fewer cases of deportation will ensue.

The suggestion has been made that physicians of the Public Health and Marine Hospital Service be stationed at the important points of departure in Europe so that each emigrant can be thoroughly examined, and those entitled to a clean bill of health be allowed to take passage. I question whether international law would sanction such procedure. Secondly, there are too many minor points from which emigrants could take passage and escape the United States government physician's examination. Of greater value would it be for foreign governments and steamship companies to make it known that if a man expects to stay in the United States, he must not become a public charge; that he must be physically, morally, and mentally sound. With such publicity and the additional examination in the manner above outlined, the United States government will be less burdened with the care of tuberculous aliens who, uncared-for, are a constant menace to the community.

An interesting suggestion in relation to this subject was made at the International Tuberculosis Congress in Rome by Dr. Antonio Stella, of New York. It was to the effect that every emigrant should be insured against tuberculosis, the cost of the insurance to be added to the price of the steamship ticket, the policy entitling the bearer to return transportation and treatment in a sanatorium in the event of his contracting tuberculosis within a specified time. This suggestion was presented in the form of a resolution, which was unanimously adopted but whether or not it results in any or definite action no country should have uncared-for tuberculous patients.

We know that alcoholism by undermining the power of resistance predisposes the individual to tuberculosis. As proof of this I can give you the statistics of my own service at Riverside, where it is true I do not get the elite of society but many of the down and outs. Let me give you the statistics of three years:

In *1908:* 349 cases, of which 259 were males and 91 females, gave the following alcoholic history:

| | Small amount | Moderate | Excessive |
|---|---|---|---|
| Male | 8 | 135 | 51 |
| Female | 2 | 21 | 1 |

This is 192 out of 259 males, 74%.

In *1909:* of 901 cases; 694 males, 207 females:

| | Small amount | Moderate | Excessive |
|---|---|---|---|
| Male | 14 | 311 | 160 |
| Female | 5 | 35 | 5 |

This is 485 males out of 694, or 69%.

In *1910:* of 773 cases; 579 males, 147 females:

| | Small amount | Moderate | Excessive |
|---|---|---|---|
| Male | 29 | 256 | 121 |
| Female | 12 | 23 | 2 |

This is 406 males out of 579, or 70%.

In *1911:* of 418 cases; 297 males, 121 females:

| | Small amount | Moderate | Excessive |
|---|---|---|---|
| Male | 9 | 121 | 71 |
| Female | 9 | 9 | 0 |

This is 201 out of 297 males, or 66%.

Bad housing is the next social cause of tuberculosis. There is enough statistical evidence to show us that tuberculosis is a disease of congestion. It is to be found in the "lung blocks" of our large cities and in the congested cheap lodging houses, in labor camps, prisons, reformatories, and schools. The very carefully collected statistics of the city of Berlin showed that 42% of all the cases of tuberculosis occur in families occupying only one room, 40% where they occupy two rooms, 12% where they have three rooms, and 6% where they have four or more rooms.

Maurice Fishberg, of New York, investigated the housing condition of 217 families living in New York, the greatest and wealthiest city of our continent. These families consisted of 1,369 persons of whom 1,129 lived at home in 717 rooms and slept in 658 beds. That is about two to a bed and 1.57 people to a room including kitchens. Of the 274 tuberculous persons only 112 had separate rooms and only 136 had separate beds. Some consumptive mothers slept on chairs or on the kitchen floor.

Fishberg * very justly says that this state of affairs is usual in all industrial centers of the United States. Is it any wonder that we come to look on every child born in such environments as a candidate for tuberculosis?

The Health Department statistics of New York show that the lodging houses with an accommodation of only 17,500 people furnish in tuberculosis hospitals and clinics combined 1,504 cases, or 8.8 per cent of the total number reported in Manhattan, although the lodging house population is only 0.75 per cent of the total population. Mr. Charles B. Barnes in the *Journal of the Outdoor Life* for April, 1914, shows that the lodging house population is eleven times more subject to tuberculosis than the average population. In connection with this Mr. Barnes says the following impressive words: "It is easy to see why so many men with tuberculosis gravitate to the cheap lodging-house. When the friendless or near-friendless man gets so weakened by his disease that he can earn little or no money, he is perforce compelled to go to a cheap place."

The next social cause of tuberculosis to be mentioned is poverty, and want as a result of underpaying. That tuberculosis is most prevalent among the poor, or those who receive low wages, is also too well known to need statistical evidence; however, it is interesting to recall here the well-known statistics of Hamburg which shows that the highest mortality was in those families with a maximum earning of $300 per year, this being three times as high as in families whose income was $1,250, and about four times as high as in families earning $6,000 a year. If such statistics concerning congestion and wage earning would be taken in the United States and Canada, I am sure the fact that tuberculosis is a house disease, one of overcrowding and of low wages, would be amply corroborated.

Thus, for example, in the experience of a single charity society, the New York Association for Improving the Condition of the Poor, it has become very evident that the prevalence of tuberculosis is in the majority of instances the result of insufficient earning on the part of the head of the family.

Thanks to the courtesy of Mr. William H. Matthews, Director of the Department of Family Welfare, I have come into possession of the advance sheet of a paper soon to be published, from which I will quote the following: "The low wages of many of the men whose widows and orphans had to be taken care of by the Society, may well be given as one of the reasons why many of the families were more or less dependent before the husband's death. Again, the result of the low wage, insufficient to supply the food, clothing and shelter necessary to healthful existence undoubtedly meant that the bodies of the men, women, and children were exposed to diseases that specially prey on underfed, poorly clothed, and badly housed people. Tuberculosis cut short the lives of 40 per cent of these men." Their minimum wage was $8 and their maximum wage $18 per week.

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* Fishberg, Maurice: "A Study of the Child in the Tuberculous Milieu." *Arch. Pediat.*, February, 1914.

In the letter accompanying this report, Mr. Matthews says: "Generally speaking, as I read relief case records and go in and out of the homes of our families, I am constantly depressed as I note the amount of poverty and want that comes through the presence of this disease (tuberculosis), and again with the fact that poverty seems responsible for the quick hold which it gets on so many of our families; that is, it appears in terms of both cause and effect, and it is often difficult to determine where the line between the two may be drawn."

Bad sanitation of schools and workshops is a subject so often discussed that I fear trespassing on your valuable time if I speak at length about it. The same may be said of child labor. All this must be done away with if we wish to combat tuberculosis successfully.

In some sections of the country as many as 50 per cent of the children of parents attending tuberculosis dispensaries have been found on examination to be afflicted with tuberculosis of various types. We know that children can also contract tuberculosis from others than their parents, as nurses, tuberculous relatives, boarders, and strangers to the household, and we furthermore know that nearly 10 per cent of the children afflicted with tuberculosis have contracted the disease by the ingestion of tuberculous milk because the bovine type of the bacillus has been found in that percentage. We are as yet uncertain whether or not the bovine type of the bacillus of tuberculosis is transformed in later years into the human type by its new environment, but we do not worry about this uncertainty; we teach, preach and practice the prevention of tuberculosis in cattle by the enforcement of the tuberculin test and by weeding out the tuberculous cattle and prohibiting the sale of tuberculous milk and meat.

An important factor to prevent our children from developing tuberculosis is to pay more attention to a healthy physique and not carry mental training to such an extent as to hinder the proper physical development of the child in school or the young girl or man in college. All children should be taught the love of fresh air and the value of deep breathing in good, pure air. The simple rules for the prevention of tuberculosis and for general hygiene should be taught the children according to their understanding. They will thus become apostles of sanitary living and of open air life in their own homes.

It goes without saying that while healthful and useful occupation under sanitary conditions is not harmful to the healthy child if it has sufficient time to play and to sleep, child labor is death dealing. It is a disgrace to our nation that child labor is still carried on in many sections of the country. All careful students of the tuberculosis problem consider child labor one of the most pathetic predisposing factors of tuberculosis in the adolescent.

Open air schools should be more universal features; in fact, I believe that we should make the open air school the rule and the indoor school the exception if we wish to combat tuberculosis in childhood.

One more word about the children. Let us encourage more breastfed babies; let our mothers glory in the fact that they gave their breasts to their children for a whole year and gladly sacrificed society's obligations so that the child may get the best possible physiological start for life and be resistant to the tuberculosis germ.

It has not been my intention to picture to you too sad a situation of the tuberculosis problem as it confronts us at this time in the United States. In the European countries, which are now in the throws of a fearful war, the tuberculosis situation is many times worse than with us. I have reliable information that many of the German sanatoria for the consumptive poor have had to be evacuated to make room for the wounded soldiers from the battlefield, who will be nursed there and if possible made strong enough to go to the front again perhaps to be wounded a second time, or to meet death. The former inmates of these sanatoria have been sent home, many not cured, with their chances of recovery much lessened and the chances of infecting others much increased.

Let us be grateful that in this country we have at least peace, and while I would not wish for a moment to have our benefactions for the unfortunate war sufferers halted, let us not forget our own consumptive poor who, because of the general business depression and the demands for philanthropy from the other side, receive now less consideration. We must not allow ourselves to be lulled into the belief that the sufferings of our consumptive poor are any less because there is so much suffering elsewhere. The tuberculosis situation in the United States is now as serious as ever and all our energies are needed in the combat of the social as well as the medical aspect of this disease.

May I now be permitted to briefly summarize what we ought to do from a social point of view to combat tuberculosis? I do not believe I can do better than to repeat here in the main the summary which I gave when it was my privilege, some months ago, to deliver the oration for the annual meeting of the Canadian Tuberculosis Association in Halifax, under the title "The Modern Warfare against Tuberculosis as a Disease of the Masses."

I plead first that the men and women afflicted with tuberculosis socially so situated as to be unable to procure the sanatorium treatment at home, be placed in an institution where all our knowledge of modern phthisiotherapy shall be applied with a view to reestablishing health and to restoring earning capacity. There should be no uncared-for tuberculous individual, rich or poor, in a modern civilized community. This means of course an increase in the number of sanatoria, special hospitals, preventoria, home sanatoria, seaside hospitals for tuberculous joint diseases, etc. If this cannot be done by the ordinary budget, let us create a special tuberculosis tax so that there will be no delay in the provision for those in urgent need of treatment. Let statesmen everywhere realize that without a federal department of health there can be no solution of the tuberculosis problem.

We must have a universal obligatory examination and reexamination of all citizens to discover tuberculosis and other diseases; judicious bovine laws to prevent infection of the human race from cattle; proper housing laws and supervision of factories and workshops to make dangerous infection impossible; reasonable and judicious temperance law and rational anti-alcoholic educational movements; the abolition of child labor and the support of the indigent pregnant woman a few weeks before childbirth and partly during the nursing period; open air schools in abundance and equally great attention demanded for the physique as for the brain in primary schools as well as in high schools and colleges; the thorough training of our medical men in early diagnosis and special antituberculosis work, and a just remuneration for the services they render thereby to the community and the state; special training for nurses and social workers among the tuberculous; education in schools and colleges, factories and workshops, by literature and lectures, exhibits and museums in all that appertains to the prevention of tuberculosis; furtherance of sanitary living, and avoidance of infection from other diseases. Our statesmen must make laws which will make farming more profitable so as to attract fewer people to the cities and more to the country, and there should be State and Municipal labor bureaus to adjust the supply to the demand for labor in various localities. Last but not least, there must be a readjustment of the earnings of the laboring men and women, there must be a minimum wage which will enable each individual if he works to earn enough to live, eat, and clothe himself decently. There must be no underfeeding, no bad housing, more enlightenment and more sanitary education. Tuberculosis in order to cease to be a disease of the masses must no longer be a disease of ignorance, congestion, or underfeeding; in other words, in order to combat the great white plague I plead with statesmen and philanthropists, with men and women of power and influence, for more social justice, more humanity to the unfortunate, more kindness and love for those so sorely in need of it. Let our war be against tuberculosis but never against the tuberculous. Let everyone have a sympathetic interest, let all those who can render personal service in this holy cause, remembering that after all service to man is the highest service to God and the most inspiring form of religion.

## CRILE'S ANOCI-ASSOCIATION.

**Warren L. Duffield, M.D., F.A.C.S.**
Brooklyn-New York.

TO be compelled to undergo a surgical operation creates feelings of fear and anxiety in the minds of practically all of mankind, and it is not simply the dread of the actual operation—the use of the knife—for this is shrouded in the oblivion of anesthesia, but it is the dread of this very anesthesia and its disagreeable and at times painful sequelae which is uppermost in the minds of many, particularly those who have been operated upon before.

Any method, therefore, which materially lessens the discomforts attendant upon surgical operations in virtually all cases and which entirely obviates them in many is worthy of study and consideration.

The first impressions of the "Kinetic Theory of Shock" and of "Anoci-association" were that they were largely theoretical and of but slight practical use in any but the hands of their author and this is the view which is apparently held by many.

It may not then be amiss to briefly review the theories brought forth by Crile, and their practical application.

He has demonstrated that fear, anxiety and other purely psychic phenomena are capable of producing shock which, if of sufficient intensity and duration, leads to more or less permanent changes in certain cells of the brain, suprarenals and liver, and further that at a given time in each individual there is a definite amount of potential energy stored in these organs. If this potential energy is too rapidly converted into kinetic energy or if repeated demands are made upon it over a protracted period exhaustion or even death may ensue.

Crile has further demonstrated that the changes in the brain cells, which are characteristic of shock whether traumatic, anemic, toxic, anaphylactic or psychic in origin, are very much greater when an animal is traumatized under ether anesthesia than when under the influence of nitrous-oxid-oxygen and that the fall of blood-pressure is two and one-half times greater under the former than under the latter. Furthermore the use of morphine, by inhibiting discharges of potential energy and diminishing the adrenalin output decreases the changes in cells above referred to.

He has also forciby called our attention to that, which is familiar to all, that although a general anesthetic may produce a complete motor paralysis it does not prevent subconscious impressions of pain from reaching the brain as is evidenced by changes in respiration, pulse-rate and blood-pressure when the region of the common bile duct is manipulated even under a profound anesthesia, or when the tissues are traumatised before anesthesia is complete. These patients will retain no memory of the pain inflicted and at the time have not the power to coordinate muscular action to prevent its further infliction, even though a temporary motor paralysis did not exist, but they are using up shock-preventing energy in an effort to protect themselves.

The practical application of this is obvious; that a patient who has spent a sleepless night in dreaded anticipation of an operation and who is transported to the operating room keenly conscious of what is about to transpire has exhausted a large amount of potential energy which subsequently may be sorely needed to combat the shock-producing effects of hemorrhage or sepsis. And further, if an anesthetic can be employed which decreases the fall in blood-pressure and the shock-producing effects of operative trauma, to say nothing of the practical elimination of nausea and vomiting and deleterious effects on kidney and respiratory system much has been done for the comfort and safety of the patient.

While the relatively light anesthesia produced by nitrous-oxid-oxygen necessitates the local infiltration of the tissues, by this means harmful impulses are prevented from reaching the brain, post-operative pains are materially diminished or abolished, the rough handling of tissues made impossible and the patient wakes from the anesthesia in a condition of considerable comfort.

To those who have followed the teachings of Crile and who have been fortunate enough to observe him at work, this cursory review of cases will be of but passing interest, but may help to confirm, if such confirmation is necessary, all that is claimed for the shock-preventing and comfort-producing "anoci-association."

For convenience the cases to be reported can be divided into several classes as follows:

Appendicitis: Ten cases. Three were of the chronic type accompanied by light bands of adhesions. Five were suppurative with localized peritonitis in one case. Two were gangrenous both with localized peritonitis and in one case there was a secondary abscess of the liver present at time of operation and which resulted in death. In none of these cases was any ether given, in all but one the muscular relaxation was perfect. In this patient the infiltration with novocain was poorly done. In one patient there was slight nausea; but no vomiting in any of the cases. One patient complained of considerable backache. With the exception of the case complicated by liver abscesses there was practically no distention, none in some of the cases, and the post-operative pain was so slight in all that where necessary one dose of a fourth of a grain of morphine was sufficient to control it.

CHOLECYSTITIS: Two cases. One patient was a large muscular man with a very bad alcoholic history and here ether was given in addition to the nitrous-oxid-oxygen but did not result in any better anesthesia. This patient had no vomiting and very little post-operative pain and distention. The second patient was a woman sixty-six years old with a chronically thickened gall-bladder acutely inflamed and containing calculi, one of which pressed on the common duct producing jaundice. There were old adhesions between the gall-bladder and the transverse colon and between the gall-bladder and duodenum. No ether was given, she had no nausea or vomiting, no distention and one dose of a fourth of a grain of morphine controlled all post-operative pain.

HERNIAS: Three cases of inguinal in all of which some ether was used. No vomiting in any case, very slight post-operative pain and no distention. One case was complicated by an undescended deformed testicle requiring orchidectomy. Two femoral hernias both entirely free from any sequelae of any kind. One done under local anesthesia alone, no ether used in either case. One very large ventral hernia following an appendectomy apparently through the aponeurosis at the outer edge of the right rectus muscle. This was a very difficult operation requiring two hours to perform due to the very dense adhesions between sac and intestines and omentum and the widely separated muscles and fascia. No ether was used and the relaxation was perfectly satisfactory. There followed no nausea or vomiting, no distention and but slight post-operative pain.

EPIPLOPEXY: One case of ascites due to atrophic vascular cirrhosis of the liver. No ether used, relaxation satisfactory, no nausea or vomiting, no distention and no post-operative pain.

INTESTINAL OBSTRUCTION: One case following appendectomy performed in another hospital. Death. This patient was known to have a chronic endo- and myo-carditis. The operation was proceeding in a very satisfactory way, no ether had been used, the relaxation was perfect, one point of obstruction had been released when suddenly both pulse and respiration failed and could not be reestablished. An autopsy revealed the following condition: partially organized thrombus in pulmonary artery at origin from heart and extending down into right ventricle. Right auricle greatly engorged. Thrombi in chorda tendineae of mitral valve. Left heart markedly hypertrophied and free fluid in pericardium.

PELVIC OPERATIONS: Seven cases, five of which were for displacements of uterus, operations on tubes and ovaries and removal of appendix. In two of these cases some ether had to be given, in one case only for five minutes. In all the relaxation was good, there was little or no distention or post-operative pain. In one case there was marked nausea and vomiting which was found to be due to the preliminary dose of morphine and scopolamine, as the patient subsequently informed me that she always vomited after the use of morphine, an observation which I had the opportunity to confirm some months later when I had occasion to administer it for the relief of severe pain. One case of removal of a large ovarian cyst occupying almost the entire abdominal cavity of a woman seventy-four years old. This was done under local anesthesia alone and her only complaint was that she could not have a full luncheon two hours after operation. One case of multiple uterine fibroids and one case of ovarian abscess. In neither case was any ether used, the relaxation was perfect, there was no nausea or vomiting, no distention or post-operative pains.

SUPRAPUBIC PROSTATECTOMY: Two stage operation. One case in patient sixty-three years of age. 1st stage without any ether, satisfactory as to relaxation and after course. Ten minutes after beginning anesthesia respirations ceased and pulse became very weak. Artificial respiration was resorted to and operation completed without further trouble. 2nd stage. Ether had to be given as sufficient relaxation could not be obtained. The failure in this case was due to poor judgment and not to the method. The patient was a short, thick-set individual with thick abdominal walls and would have been a better subject for a perineal rather than an suprapubic operation. Post-operative course very satisfactory.

VAGINAL OPERATIONS: Five cases. One case of repair of cervix and curettage, one case of posterior vaginal section for pelvic abscess and three cases of curettage for incomplete abortion. In the repair of the cervix a few drops of ether were given. In the other case no ether was used; there was no nausea nor vomiting and post-operative course was satisfactory.

BREAST AMPUTATIONS: One case operated upon twice. 1st operation for the removal of growth for examination. 2nd operation, complete breast amputation with removal of sternal portion of the pectoralis major and complete dissection of the axilla. Post-operative recovery without nausea or vomiting. After second operation an infection occurred which naturally cannot be laid to method of anesthesia.

MISCELLANEOUS CASES: One case each of the following: varicocele, sebaceous cyst of shoulder, amputation of great toe and tuberculosis of spine, sacrum and ilium. Post-operative course satisfactory in all. In none of these cases was any ether given nor was there any nausea or vomiting. One case of lymphedema of arm upon which a lymphangioplasty was done. Due to having to turn patient on side to get at region over back of scapula it was found difficult to continue the administration of nitrous-oxid-oxygen and ether was resorted to. It was also inadvisable to attempt to infiltrate such an extensive area particularly in the presence of a marked edema. This case should not be considered a failure as the method was contraindicated.

To summarize; there were forty-one operations under anoci-association with two deaths, neither one of which can be charged to the method of anesthesia as one was due to a pulmonary embolus and the other to an abscess of the liver. There was but one case of vomiting and that in a patient who had a marked idiosyncrasy to morphine. In six cases some ether had to be given, in some only for a few moments and then discontinued, in others the operation had to be completed under ether. It was never necessary to give more than one-fourth grain of morphine for the control of all post-operative pain and distention was conspicuous by its almost complete absence. Most of these patients were conscious when returned to their beds, some of them spending the afternoon of day of operation reading.

Though the technic of anoci-association may be readily acquired, at least to a fair degree by all possessing a reasonable amount of surgical skill, judgment and experience, yet it is not a method which will give full satisfaction if practiced in a haphazard fashion. No detail is too small to receive its proper attention and to be given its full value and this means that not only the operator but his assistants and nurses must be aware of the aims to be accomplished and must work in harmony for their accomplishment.

In the regular routine of hospital practice with rotation of the House Staff through the various positions the question of a competent anesthetist is one of paramount importance, for with the anesthesia of nitrous-oxid-oxygen it must be exactly right. Too light an anesthesia allows a semiconscious struggling and resistance and too deep an anesthesia produces a cyanosis with consequent engorgement of vessels and free bleeding obscuring the field of operation.

An objection may be raised that a method requiring local infiltration in addition to general anesthesia, not to mention more delicacy in handling tissues is too time consuming. This is logical to a certain point but not beyond. It is not given to all to be as rapidly dexterous as Crile and therefore more time will be spent, but spent in a way that will bring rich returns in greater safety and comfort to patients, and in the last analysis that should be the aim and object and not simply a large spectacular clinic.

Can there be any question that ten or even more minutes added to the time of operations, particularly under the safest of all anesthetics if skillfully administered, is not amply compensated for by increased safety and by comparative or absolute freedom from pain, nausea, vomiting and distention which may extend over a period of days and cause more suffering and anxiety to the patient than the condition for which he sought relief?

A detailed description of technic has intentionally been omitted for the reason that justice could not be done in a short article. To thoroughly appreciate the real value of the method requires that the whole subject be studied.*

In conclusion I wish to take this opportunity to express my appreciation to Dr. G. Frank Sammis for his interest and cooperation in administering and directing the administration of anesthetics, and to Doctors Smith and Blezard of the House Staff of St. Johns' Hospital for their active interest and hearty support without which this most interesting work could not have been accomplished.

## CARCINOMA OF THE RECTUM.

### Report of Three Cases.

Arthur H. Bogart, M.D.
Brooklyn-New York.

CASE I: A. T., male, age 30 years, occupation painter, referred by D. W. C. Weeks, came under our care August 25th, 1914.

*Chief Complaint:* Constipation and pain in the rectum.

*Family History:* Negative except that his father had a cancer on his face which was apparently cured.

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* "Anoci-association," by George W. Crile, M.D. and William E. Lower, M.D. W. B. Saunders Co., 1914.

*Personal History:* The patient has had the usual diseases of childhood and an attack of jaundice about seven years ago; otherwise healthy.

The present trouble began in the early spring when the patient first began to suffer from severe constipation, sometimes going for three or four days without a passage unless he took medicine. About the same time he noticed that the size of the passages was becoming smaller and ribbon-like in character. About June he began to have frequent desire to defecate and when he went to stool passed a small amount of material which looked like the white of an egg. This would afford relief for about half an hour when the same desire came on again. At this time he also noticed that he was passing some blood with each defecation and he began to suffer from pain in the back and rectum. This pain become more severe and was accompanied by increasing constipation until he came under our care. At this time he could scarcely pass anything from the bowels and was beginning to present symptoms of intestinal obstruction. Since the beginning of his illness in the spring he had lost about 14 pounds in weight.

Examination showed an annular growth in the rectum about two inches from the anal margin. The finger could not reach above the upper margin of the growth. There were no palpable glands.

An inguinal colostomy was done at this time which promptly relieved the obstructive symptoms. At this time exploration showed no metastases in the liver or other organs and the growth seemed to be confined to the rectum, which was movable.

The patient was allowed to go home with instructions to report later for the second operation. The patient returned to the hospital about a week later in good condition, and requested that the growth be removed.

On the 23rd of September we excised the diseased portion of the rectum in the following manner:

The usual preparations having been made, the patient was placed in the reverse Trendelenburg position and the anus was closed with a purse-string suture of silk. An incision was then made from the anus upward, exposing the coccyx and lower portion of the sacrum and the coccyx and lower segment of the sacrum were removed. This afforded room for further work in the removal of the disease. The diseased portion of the rectum was then freed from its attachments and removed, the upper and lower ends of the gut being closed by suture after disinfection, no attempt being made to unite the two ends. In removing the growth the bowel was ruptured. This resulted in more or less soiling of the wound and subsequent infection. It was, however, not serious enough to prevent a practically normal recovery. In the removal of the growth, the peritoneum was opened but slightly and the hemorrhage was not very great. The patient was discharged on October 19th in good condition and has since been heard from and is in good condition.

The microscopical report in the case was adenocarcinoma.

*Case II:* G. S., female, age 55 years, occupation housewife, referred by Dr. R. W. Shearman, came under our care in June, 1913.

*Chief Complaint:* Pain and distress in the lower abdomen.

*Family History:* Negative so far as the present trouble is concerned.

*Previous Personal History:* The patient has had the usual diseases of childhood; otherwise, the previous history has been uneventful.

*Present History:* The present illness began only one week before admission when the patient first began to suffer from sharp attacks of pain in the pelvis and lower abdomen and a feeling of tightness in the same region. She also had some pain during and after micturition. At about the same time she first noticed that the abdomen was somewhat swollen.

Examination shows a rather emaciated woman without apparent cachexia. There was a moderate sized tumor in the lower left quadrant of the abdomen which was apparently movable and slightly tender on palpation. The same mass could be felt *per vaginam* and seemed to be connected with the left tube or ovary.

Operation was done in this case on June 30th, 1913, through a median incision. The tumor mass above described proved to be a palpillomatous cyst of the left ovary. This, together with the appendix, was removed. At the close of the operation an annular growth was found involving the upper part of the rectum, which at this point was freely movable. The growth, with about three inches of the gut, was excised and an end-to-end anastomosis done after the method described by Balfour.

The patient made a good recovery and was discharged at the end of three weeks. She remained well for about one year when she died following an operation for ileus resulting from a recurrence of the papillomatous growth. Examination of the gut at the point of operation showed no recurrence.

There was nothing in the history of this case pointing to a growth in the rectum, nor was it suspected until it was found at operation.

No microscopic report was made in this case.

*Case III:* M. B., female, age 38 years; from the service of Dr. J. B. Bogart at the Kings County Hospital; admitted November 6th, 1914.

*Chief Complaint:* Bloody and fecal discharge from the vagina with local pain and backache.

*Family History:* Father died of pulmonary tuberculosis at the age of 27. One brother died of the same disease at the age of 39. Otherwise, negative. The patient denies venereal infection.

*Previous Personal History:* Measles when a child; malaria five years ago; no other illness that she can remember.

*Present History:* The present trouble began about three months previous to admission when the patient began to suffer from pain in the back and sacral region with increasing constipation, loss of flesh and strength with a discharge of mucus and blood from the rectum. At about this time the patient noticed a small mass just inside the vagina which gradually increased in size and finally ruptured, discharging blood, pus and fecal matter. For two weeks the patient had suffered from frequent and painful micturition.

*Examination:* Immediately within the rectum and extending beyond the reach of the examining finger there is a hard nodular growth which is painful and bleeds easily. This growth extends forward, involving the posterior vaginal wall, where it has ulcerated through, causing a recto-vaginal fistula. There are some palpable glands in the left inguinal region. No mass can be felt through the abdomen.

On November 21st, 1914, an inguinal colostomy was done and the abdominal cavity explored. No metastases were found in the liver or other organs. The growth in the rectum was confined to the rectum and posterior vaginal wall.

On December 6th, by the combined perineal and sacral routes, with the patient in the lithotomy position, the anus, posterior wall of the vagina and lower portion of the rectum were freed. The patient was then placed in the reverse Trendelenburg position and the operation completed as described in the former case. She suffered considerable shock from the operation, but reacted promptly, and was discharged from the hospital about three weeks ago.

The pathological report in this case was adenocarcinoma.

## THE EFFECT OF LA GRIPPE ON THE HUMAN EAR.*

**Lefferts A. McClelland, M.D.,**
Brooklyn-New York.

FROM the foreword on the Pathology and Bacteriology of Influenza by Dr. S. R. Blatteis, I am convinced that true grip dependent on the Pfeiffer Bacillus is by no means as common a disease as is generally supposed: yet there is a disease so analogous and so similar in its varied manifestations that without the aid of the bacteriologist it cannot be differentiated from the true form. I shall then presume to discuss some effects upon the ear produced by that disease vulgarly known as grip and which makes its appearance quite regularly during the winter months, more especially during February and March in this climate.

*Invasion.*—This grippal infection usually first invades the nose, a chimney with two flues and many recesses, and the hordes of bacteria soon upset the usual state of tranquility and restful regularity with which the functions of this important viaduct are customarily performed.

*Occlusion.*—In fact when these invading armies take possession of this structure they promptly start to choke off the air supply from the nose and to do this they simply instigate such a terrific struggle among the opposing microorganisms that the field of operation is for a time being so nearly divested that all semblance of its original intranasal morphology has been obliterated within the nose and instead of having tubal patency capable of functionating we find the contiguous and opposing walls which had heretofore continued to dwell in peace and harmony set against themselves literally; for do they not crowd on every side so that a total occlusion results? This picture of the condition of the anterior nares is suggestive of what happens to other nearby structures all of which are capable of being influenced by this peculiar affection which usually begins as an influenza and myalgia and which frequently terminates as a necrosis of the soft and hard parts of certain portions of the body.

*Deflation.*—The epipharynx, that great dome usually spoken of as the post nasal space, having been similarly invaded suffers swollen walls which in turn cause a closing of the openings which lead to the hallway leading to the drum of the ear. I say the Eustachian tubes are closed from the swelling of the mucosa and the structures beneath so that the air balance looked for and needed by the drum is no longer present.

*Pressure.*—Remember so soon as the intra and extra tympanic pressure differs there is certain to be trouble. The 15 1-2 lbs. aerial pressure in the external auditory canal easily overcomes the lesser pressure behind the drum membranes. Hence there is at first a falling in of the membrana tympani and this tends toward displacing the ossicles besides otherwise disarranging normal relationships. With all the air chambers to the ear closed the natural resiliency of the tympani is lost so that an invasion of the morbific bacteria becomes a serious complication. There is inherent within the ear a tendency to resent any interference with the tympanic pressure and such change of pressure is often quite sufficient to induce a condition inviting bacterial attack and reducing the proper defense.

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* Part of a Symposium on La Grippe presented to the Brooklyn Medical Society on March 19th, 1915.

*Pain.*—Once having gained the upper hand the results of an aural complication in grip show themselves in the development of a very severe form of acute catarrhal otitis which hastily changes into the more urgent purulent type. This induces pain which is usually very severe and persistent. Once this is established it behooves the medical attendant to be alert that he may recognise the urgency of the call which is sent out for drainage of these parts already filling up with the products of destruction which are rapidly accumulating.

*Requirements for Relief.*—Liberate the pent-up products—keep them cleaned away to protect structure and function—a free incision of the membrana tympani from top to bottom that the best possible drainage may occur from within the tympanum is imperative so soon as pressure symptoms within have developed. Following this, irrigation with suction facilitates the cleansing by washing and aspirating simultaneously. Notwithstanding these procedures there is a considerable danger that the mastoid antrum and its contiguous cells will become involved and henceforth a situation fraught with more danger has arrived. My personal experience in otological surgery has confirmed my belief that no other disease is responsible for so large an epidemic of acute mastoid cases as is this one under consideration. Again the rapidity of the destruction of the mastoid bone, be it cellular or petrous in character, by the bacteria responsible for this disease is almost unique. In fact once the mastoid invasion is established there is a decided tendency toward involvement of the mastoid tip with its large tip cell. Destruction here is not infrequently productive of a perforation through the lower portion of the apophysis causing Bezold Mastoiditis with its possible train of symptoms due to a dissemination of the infection into the deep structures of the neck. Again the extension of the necrosis may and frequently does travel posteriorly and inward involving the hard covering of the sigmoid sinus and producing either a peri-sinusitis with development of subdural abscess or the sinus itself may be involved. A rapid destruction of the barriers thus affords a fertile field for abscess in either the cerebrum or the cerebellum. Where the process goes on in the walls of either the roof of the tympanum or mastoid, or from extension from the zygomatic cells an abscess of the middle fossa may develop which may be simply subdural or a true brain abscess which is usually found in this region to have formed in the temporo-sphenoidal region of the brain.

During the past fifteen months I have operated on two cases of post grippal sigmoid sinus thrombosis which necessitated the ablating of the internal jugular, jugular bulb and the sigmoid sinus. I take pleasure in exhibiting the successful one of these two cases, that of Charles McDonough whom I now present to you for inspection. In brief his history is as follows: Had post grippal mastoiditis with high fever following chill and a diagnosis of trouble in the region of sigmoid sinus was made. On operating it was found he had a perisinus abscess (subdural) and a thorough removal of all cells of mastoid and drainage of region about sinus gave hope of his uninterrupted recovery. However, a summons in the form of temperature in the region of 106 suddenly determined my further exploration and finally it was deemed wise to relieve him by the radical procedure of removing the jugular vein with its branches, the jugular bulb and sigmoid sinus having been incised, curretted and packed. He has made a perfect recovery and suffers no secretion from the ear from which he hears conversation well and his health as you see is in no way impaired. The time limit of ten minutes for my paper permits only suggestive discourse and this prohibits a more thorough consideration of this subject. The suggestions afforded as to the very serious and by no means uncommon complications of grip indicate clearly the need of prompt and efficient efforts if life is to be saved.

## CHARLES EUGENE LACK, M.D.

We, the members of the Norwegian Hospital Alumni Association wish to record our deep sorrow in the death of our beloved friend and fellow worker, Charles Eugene Lack, M.D.

Those who have been associated with him in the medical calling for many years can best appraise those fine qualities of mind and heart which marked him above men. As a physician he was gifted and industrious, conscientious and self sacrificing. As a friend he was of sterling character and lovable disposition. The loss of his activity and comradeship will continue to be felt by all the members of this society.

To his sorrowing relatives we venture to offer this expression of deep-felt sympathy in the great bereavement that has come to them, asking them to find comfort in the circumstances that their loss is shared by an unnumerable company to whom Dr. Lack was most dear, alike as physician and friend. Therefore be it

*Resolved,* That this notice be entered upon a separate page of the minutes of this society, and that a suitable copy of this memorial be forwarded to the family of the deceased, and to the medical press of this city.

"Reflect that life, like every blessing,
Derives its value from its use alone."

Committee on Resolutions:

W. CARL SCHOENIJAHN, M.D.,
ROBERT EMMETT COUGHLIN, M.D.

## THE JUNE MEETING.

The Spring meeting of the Associated Physicians of Long Island will be held on Saturday, June 19, at Eaton's Neck near Northport. The meeting place is situated at the entrance to Huntington Bay and affords a delightful view of the Sound and the Bay. It is provided with ample shelter in case of rain and with outdoor tables under the trees for use in pleasant weather. A shore dinner including clams and lobster will be served immediately upon arrival. The cost of the dinner will be two dollars per head. Dinner tickets should be procured in advance so that all may be provided for.

For the convenience of those coming from the west end of the Island, a steam yacht has been chartered to carry the members directly to the place of meeting. The yacht will leave Battery landing, New York City, at 10 a. m. The round trip fare will be a dollar and a half.

Those who prefer to go by rail, should take the regular train leaving Flatbush Avenue station for Northport about 11 a. m. Those who intend to go by rail should so inform the entertainment committee so that transportation may be provided from the Northport station to the meeting place. The committee cannot assume responsibility for this transportation unless so notified in advance.

Those who wish to go by motor should follow the trolley tracks to the Soldiers Monument opposite the church in Northport village, where they turn to the right up the hill, following the good road to East Beach and thence to Eaton's Neck. Red cards with a black arrow will be posted for the guidance of motorists.

Without neglecting the scientific program, the committee has planned to emphasize the outing features of this June meeting. The speakers will be few and good and their subjects timely and interesting. After much deliberation it has been decided to try the experiment of inviting the ladies—the wives, daughters and friends of the members. It is hoped that this new departure may be the means of engaging the interest and enlisting the active support of some of our members who have hitherto been lukewarm in their allegiance, but who ought to enter more fully into the life of the society. It is announced that there will be opportunity for boating, bathing, dancing, games, rambles on the beach and through the country, and the many pleasures afforded by a day's outing on land and water.

We would urge our misogynist members, if there be such amongst us, to enter into this experiment in the truly scientific spirit. Do not let prejudice bias your judgment as to what is best for the society, but come and share in the experiment, so that you may be in a position to decide whether a repetition of this experiment at some future June meeting will tend to weaken or strengthen the society.

GUY H. TURRELL,
President.

# EDITORIAL

## TOO MUCH MEDICAL LEGISLATION.

Dr. William J. Cruikshank is quite right when he emphasizes the harm which is likely to come to the State from the constant attacks made upon the public health laws. To one who has followed year by year the repeated assaults made with varying success by unqualified aspirants for unearned privileges, it becomes increasingly evident that there are grave faults in our present method of legislation. A bill that is killed because of its intrinsic unworthiness at one session surely cannot gather virtue simply because it is reintroduced at the next session; but bills directed against animal experimentation, vaccination and in favor of Christian Science and other equally uneducated cults, crop up year after year in almost identical form. Any assault upon barriers against epidemic disease is distinctly against the public interest. Any risks, however remote, that the public is compelled to run because of the selfish clamor of a class or cult should not need to be fought by physicians, but should at once arouse the opposition of all thoughtful and public spirited men. A constitutional amendment prescribing the nature of proposed legislative acts and reducing the opportunities by which bills may be enacted into law would clarify the situation. In addition a bureau must be established at every state capital, as well as at Washington, by the combined Medical Associations of the entire country to give publicity at once to all bills in any way affecting the public health laws in order to provide the means of prompt, united and adequate action by the physicians of this country upon matters affecting the public health.

This suggestion has been made repeatedly in these columns and its reiteration may in time bear fruit. H. G. W.

## THE DOCTOR AND THE CITY.

Mr. McAneny's address on the relation of medicine to the municipality, published in the May number of the Long Island Medical Journal, will repay careful analysis, if for no other reason than his statement of the number of physicians employed by the city. One thousand, six hundred thirty-two physicians are on the city pay-roll out of a total of 8,100 to whom about a million dollars is paid annually in salaries. The fact that so large a percentage of physicians have some city employment will undoubtedly come as a surprise to many who have not heretofore thought much about the subject and possibly the fact that by far the greater number of these are employed on part time only will explain why Mr. McAneny's figures, impressive as they are, yield only $613.00 a year to each of these physicians. As a matter of fact the city employment of physicians is as yet based upon principles which differ materially in each one of the departments to which they are attached. The Department of Health employs a comparatively small number of full-time physicians at salaries ranging approximately from $5,000 to $2,000 a year and a very large number of sanitary and school inspectors on part-time salaries at approximately $1,000 a year. Add to these the internes in hospitals controlled by the Department whose salaries are nominal, and lack of system is very evident. The Police and Fire Departments and the Coroner's office have attached to them a small number of physicians, approximately less than fifty, at salaries ranging from $3,500 to $3,000; while nominally employed on part time, physicians of this class are gradually but surely finding their duties so augmented as to make private practice increasingly difficult. Several of the other departments including the Civil Service, the Street Cleaning and the Finance Departments, employ a small number of physicians at approximately from $2,500 to $1,500, as examiners on part-time salaries. Add to these the hospital employees, the hospital medical officers of the Department of Charities and those attached to the Department of Correction and the list is nearly complete. In each department there seems to be a different standard by which the appropriate duties of its medical officers are judged, and in them all there is an apparent tendency to overlook the terms under which they were originally employed and to steadily increase the demands upon their time without a corresponding increase in wages. In other words, while standardization is a slogan of the times, it is not generally applied to the physicians in the city employ, nor is there a just appreciation of the varying duties to which they are assigned, nor any attempt made to equalize the nature of the duties, the hours per day demanded and the salary. For instance, the Police Department pays its surgeons $3,500 less 2 per cent pension deduction, with the understanding that the surgeon's first duty is to the Department and that his spare time is his own; but takes no account of the distances traveled nor of night work. It could be shown that the average paid by the Police Department is less than $1.00 a visit. Viewed in this way the City pays its medical employees far less than the prevailing rate of wages and demands more, with fewer incentives for self improvement than does private employ.

The suggestions in Mr. McAneny's address are largely along the lines of the development of the so-called "uplift," such as the efforts of the Department of Health now being directed to providing increased privileges for the general public by the establishment of free clinics for tuberculosis and other diseases. It is co-operating with the Department of Education in providing free examinations for school children and has more than suggested the wisdom of providing annual health inspection for the general public. But we fail to see where the medical employees are to be benefited inasmuch as no provision is made in the budget for increased pay, except as there is an occasional recommendation for the employment of experts at large individual salaries. Economy in administration has been accomplished by the curtailment of some salaries and the abolishment of minor officers and some enthusiasts have urged upon the Board of Estimate that a number of the more highly paid medical officers in the city employ are needless and should be disposed of.

"The toad beneath the harrow knows
Just where each aching tooth point goes;
The butterfly upon the road
Preaches contentment to that toad."

There is little doubt that could an entirely unprejudiced commission, representing both the taxpayers and the city medical employees, study present conditions of employment. they would find much to criticise in the present attitude of the city as an employer.

There is much in Mr. McAneny's address to excite enthusiasm; there are many reasons why the municipality should take the lead in bettering the physical as well as the moral side of its citizens. The "uplift" is a splendid thing, but in furthering the uplift the interest of the physicians who are the ultimate sufferers because of the steady dwindling of their source of livelihood and the constantly increasing demands for better training in their profession, must not be forgotten.

H. G. W.

## ARMY MEDICAL SERVICE.

Surgeon General Gorgas has announced a plan shortly to be put into effect looking to the improvement of the Medical Reserve Corps. When this branch of the Army Medical Service was inaugurated some years ago a number of physicians scattered throughout the country were invited to accept commissions on the inactive list that they might be called upon for garrison or depot duty in the event of war; that through their influence desirable candidates might be obtained for the regular service; and particularly that their personal interest might lead them to a more detailed study of military surgery. Thus far, except for the formation of medical reserve organizations in New York and Chicago, little has been accomplished except in a very general way and the plan now suggested promises well. Inactive members of the Reserve Corps have been invited to participate in this summer's classes of instruction that are to be held at several points throughout the country during June, July and August. This will give as many as care to seize the opportunity a chance for preliminary instruction under pleasant surroundings and at trifling expense.

If the lesson of the European war is to be heeded at all it should bring home to the Medical Profession the urgent need for practical instruction in the routine of military practice, a branch that is so absolutely different from civil medicine that a preliminary training is absolutely necessary. During the war with Spain the lack of a sufficiently large medical corps was felt early and even after a semblance of training had been obtained, the Medical Service was still hampered in its administration by the inexperience of the otherwise able men who were called on to undertake administrative cares for which they had previously not been trained. The further development of an adequate national defense, in spite of the mental attitude of an element in this country who are satisfied to let things drift as they are, demands that there should be better preparation for the immediate placing in the field of an adequate force for defense, as it is folly to believe that such a force will spring up ready armed and ready trained at the call of the President as Mr. Dove-of-Peace Bryan seems to think. They must be trained and seasoned and disciplined. An adequate extension of the Medical Corps is equally essential and it would seem quite competent for the Surgeon General to go a step beyond what he has already done and, instead of inviting the gentlemen of the Medical Reserve Corps to accept an opportunity, direct them to report for duty at stated periods.

H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

*Regular Meeting of the Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, Nov. 5th, 1914, at 8:30 p. m.*

The President, Dr. James C. Kennedy, in the Chair.

*Program.*

Report of cases:

A. (1) Fracture of Femur. Patient. X-ray.
(2) Partial Colectomy. Patient. X-ray. Specimen. James Watt, M.D.
B. Anomalous Tumors of the Liver. Three cases. L. S. Pilcher, M.D.
C. (1) Chronic Dislocation of Radio-ulnar Articulation. Operation. Patient.
(2) Double Pott's Fracture. Operation. Patient.
(3) Satisfactory Artificial Anus. Patient.
(4) Specimen of Carcinoma of Rectum with large Uterine Fibroid.
Wm. B. Brinsmade, M.D.

Case (1) discussed by Dr. E. H. Fiske, Dr. J. Sherman Wight, Dr. L. S. Pilcher, Dr. Walter Truslow and Dr. Wm. B. Brinsmade.

Case (2) discussed by Dr. Walter Truslow and Dr. Wm. B. Brinsmade.

Paper: "Gastro-Jejunal Ulcers." E. H. Fiske, M.D.

Discussed by Dr. Wm. B. Brinsmade, Dr. Wm. Linder, Dr. H. G. Graham, Dr. R. W. Westbrook and Dr. E. H. Fiske.

### Fracture of Femur. Patient. X-Ray.

*James Watt, M.D.*

N. R., age 59, coachman and houseman. On Feb. 17th of this year he sustained a fracture of the shaft of the right femur and a Colles' fracture on the same side. He was referred to the speaker at the Long Island College Hospital. Examination revealed a fracture high up in the shaft of the right femur. A temporary splint was applied and he was sent to the X-ray Department for examination. This picture demonstrates an oblique fracture just below the trochanter with inward displacement of the upper end of the lower fragment. Measurements of the injured extremity just before this picture was taken showed shortening of one and one-half inches. On interrogating the patient in regard to previous injury, he says, "One year ago he had an injury to this hip, which resulted in a permanent shortening of one-fourth inch."

On Feb. 19th, under ether anesthesia, with the injured member strongly apducted and extended, measurements were taken and found to be equal to the normal side. With the leg still held in this position a plaster of Paris spica was applied. Five days later a second radiograph was taken through the cast. This demonstrated a very considerable deformity and from reading of the picture, a shortening of about one and one-half inches.

The patient was again taken to the operating room, the original cast removed, a further attempt at reduction and measurements taken by Dr. Jaques Rushmore and myself showed no shortening. A second plaster spica was applied with the leg in the extended and abducted position. He wore this cast for six weeks, remaining in bed for one week after the cast was removed. He was then allowed up daily on crutches. He was discharged from the hospital on March 17th, eight weeks after admission. Measurements were taken by the speaker and confirmed by Dr. Jaques Rushmore. one-fourth inch shortening.

The subsequent history up to the present time is of no particular interest, with the exception that he returned to work about May 1st.

He was examined by Dr. Rushmore and the speaker today and the following facts noted:

A very slight limp, hardly noticeable; extension, abduction, adduction and rotation perfect; a very slight impairment of flexion; shortening three-quarters of an inch.

Here is a patient with as nearly a perfect functional result as I believe it is possible to obtain in a fracture in this situation without open operation and now I want to show by those plates, taken one week ago, the anatomical result, of which the speaker is not over proud.

### Partial Colectomy. Patient. X-Ray. Specimen.

*James Watt, M.D.*

C. H. P., age 53, lawyer.

Family history negative in regard to malignancy. The patient was perfectly well up to December, 1913. At that time he was troubled with a general loss of energy. He had to give up walking to his office, which had always been his habit. He consulted a physician who diagnosed chronic appendicitis and advised operation, which was refused. He consulted the speaker on Jan. 19th, 1914. From December 13, up to the time I first saw him, he had been gradually growing weaker; as he expressed it, "Sliding down hill." The day preceding my first visit it was with difficulty that he was able to reach his home. He had: indigestion, much belching and sour eradications, cachexia, sallow and sunken cheeks, no constipation, feeling of discomfort in the right iliac fossa, not amounting to pain.

On palpation a hard mass was felt about half the size of an orange, occupying the right iliac fossa, freely movable and insensitive to pressure.

After giving bismuth by mouth and an enema, a radiograph was taken, from which these prints were made. They show clearly the encroachment of the tumor on the lumen of the gut.

On Jan. 28th, through a right rectus incision, the caecum, ascending, hepatic flexure and portion of the transverse colon were removed, together with about 4 inches of the terminal ileum, and a lateral anastomosis made by the suture method between the transverse colon and the ileum.

There was considerable post-operative shock, followed by a stormy convalescence.

He left the hospital on Mar. 19th of this year weighing 115 pounds. On May 1st his weight was 134 pounds; July 1st, 140 pounds; Oct. 28th, 152 pounds. He now feels well and is able to attend to the duties of his profession.

These x-ray plates, taken about one week ago, show the position of the anastomosis. The specimen shows an adenocarcinoma and the part mounted here is only a small portion of that removed.

### Chronic Dislocation of Radio-Ulnar Articulation. Operation. Patient.

*Wm. B. Brinsmade, M.D.*

About eighteen months ago this young lady was lifting a number of books and was carrying them in her hand. She changed her position to twist her hand this way (indicated) and at the same time felt something snap in the neighborhood of the wrist. When she looked at it she found a protrusion on the posterior surface of the wrist which on manipulation readily slipped back into place. From then on for three months she was troubled with a recurrence of this deformity. At that time she went to a hospital in New York where she was admitted and anesthetized and an operation performed from the ulnar side and I am informed that an attempt was made to reduce the ligamentous attachments around the radio-ulnar articulation. This was not successful. About six weeks after that she came into the Long Island College Hospital where I made an attempt by an incision on the back of the hand, over the joint, to cut down to it and sew up the ligaments and any tissues that I could get to fasten the radius and ulna together. This also was not successful. She then went around unable to accomplish any of her ordinary works in life and as she is obliged to do something and being utterly incapacitated, I told her that I would attempt something that might be successful and might not. I did not know. I took a nail and drove it in from the ulnar side into the radius. This was followed by considerable pain lasting for a few days and after that the pain gradually disappeared and for seven months up to two weeks ago she was well and was carrying on her ordinary occupations until at that time she lifted rather a heavy piece of ice and something sprung loose there again. It was before this last accident that I decided to show her to the Surgical Society and on sending for her I found that her trouble had come back.

A week ago I took a longer nail and drove it into the radius. I tried to find the first nail, but was unsuccessful in finding it.

I feel that the interesting part of this case is that this girl's supination and pronation were very good after the first operation. Of course, it is only a week since the last operation and she holds herself a little stiff. There was a distinct dislocation of the ulna on the radius.

### Double Pott's Fracture. Operation. Patient.

*Wm. B. Brinsmade, M.D.*

Last January this patient was brought into our service, having sustained an injury, three months before he came to our attention, around both ankles. He was treated in one of the institutions with plaster splints (put up in plaster) and when he came to us we found that he had the condition of double Pott's fracture which had not been reduced. He was absolutely incapacitated; he couldn't earn his living; he couldn't do anything. It seemed only fair that we should make an attempt to do something for him, so we operated first on the right leg by a longitudinal incision along the fibula and along the tibia and then we went back and took out a piece of bone by a v-shaped incision until we could get the foot back into place. That made a good recovery and his foot looked well and looked straight and healed strongly, so ten days later a similar operation was done on the other foot. He then disappeared from my observation until about two weeks ago when I was sorry to find that he had misunderstood our instructions and on the foot which was the worse he had a shoe built up on the outside instead of on the inside. Where it had been properly built up on this one he walked very well. On the right foot, however, where the support was outside instead of inside of the foot, he was walking badly. We had that changed and then he walked a good deal better. We then sent him to the Orthopedic Department to have a splint made and they have been strapping his foot.

I would like to have you see how well this man, who last January could not walk at all, can walk. He has his shoes off. He needs the support on his right foot of the sole raised on the inside. He is doing a little work now. He says that he is able to stand on his feet for a good long while, but that when he stands too long, he begins to get tired, which is to be expected. He fell from a height, landing on both feet.

I am glad to be able to bring up the subject of Pott's fracture because I think that it is about time that that subject was refreshed in the minds of the practitioners generally. During the past year or year and a half we have seen more cases of deformity following this characteristic Pott's fracture than we ought to see, and I think more than we used to see.

(At this point, Dr. Joseph P. Murphy asked Dr. Brinsmade to explain more clearly the technic which was followed in this particular case, as he did not seem to quite understand just what Dr. Brinsmade had done, whereupon Dr. Brinsmade explained that he had taken out a wedge-shaped piece of bone from the tibia and fractured the fibula; that there was very little backward displacement and that the same operation was done on both sides.)

The characteristic Pott's fracture is, hardly to say, a simple thing. The symptoms and deformity of Pott's fracture are classical and they ought to be recognized and the method of reducing them should be recognized.

### Satisfactory Artificial Anus. Patient.

*Wm. B. Brinsmade, M.D.*

On Feb. 20th, 1913, this man came under our observation with a history that he had had distress in his rectum extending over a considerable length of time; that he had lost 40 pounds in weight and that he had had some bleeding. On examination, the tip of the finger, firmly pressed through the anus, was able to reach the margins of a tumor. This was recognized as a neoplasm and operation was suggested. The operation performed was done through a transverse incision. The sigmoid flexure was lifted up and cut off, leaving a large loop on the proximal end, so we had a loop of 8 inches going down and then up. At that time a second incision was made about 2 inches above the transverse incision. The end of the gut was brought up between the peritoneum and through the rectus muscle. The rest of the operation consisted in removing the tumor from the inside and invaginating the gut. The removal of the gut that was left after the tumor had been removed, was done on the second operation and during that the bleeding was very profuse and we left a strip of mucous membrane unintentionally. That was burned out at a third operation. He now has some mucus discharge from his anal opening. On Feb. 20th, 1913, the first operation was done, so he has gone up to November, 1914, with a gain of about 45 pounds in weight. He looks well and has no sign of any further trouble there.

I have practised the same procedure as successfully in one other case and believe it to be perhaps the best method of making an artificial anus. The tumor was about one inch long, but deep, and there were no glandular involvements and the pathological report showed a neoplasm. I think the real reason he gets along so well is that he has a large loop of intestine in which his fecal matter accumulates and he has to attend to himself but once a day.

The other case I referred to was that of a woman on whom the posterior operation was much easier than the man (through the vagina), and in that case she takes a syringe in the morning and it takes her about twenty minutes to get ready for the day.

Of all the cases of artificial anus I have ever seen this one is the most satisfactory. His disease was apparently removed because his general condition of health is, as you see, good. He is 48 years of age.

## Double Pott's Fracture. Operation. Patient.

*Wm. B. Brinsmade, M.D.*

Dr. Walter Truslow, in opening the discussion, said: "I am glad that Dr. Brinsmade has put so much stress on this deformity and the resulting disabilities. I have seen several cases where a faulty union has caused real disability. The disability usually may be classed as a flat-foot, in particular a foot in which the plane on which the ankle-joint acts is not horizontal, as it should be. If the union of the fractured tibia is such that there is an elongation of the tibia, the internal malleolus is lower and the plane on which the ankle-joint proper acts is dipped downward and inward, and most of the disability that the individual has is due to impinging of the foot against the ankle-joint, plus the discomfort that usually comes with flat-foot.

"The operative procedure, I think, is the correct one, taking out the v-shaped piece of bone from near the ankle-joint proper, just above it, and drawing the foot inward until the ends approximate. In one of my cases of that type I added the Albee method of carrying a piece of the bone surface downward through a chiselled out groove to bridge over and hold the bone fragments together. I think that union is thus firmer. It is important to recognize the resulting disability of these deformities."

## Chronic Dislocation of Radio-Ulnar Articulation. Operation. Patient.

*Wm. B. Brinsmade, M.D.*

Dr. Edwin H. Fiske, in opening the discussion, said: "In regard to that case of Dr. Brinsmade's, I would say that I have seen one case of acute dislocation. That is, I saw the case in the early stage of a dislocation of the ulna. It was due in that instance to direct violence caused by the twisting of the patient's arm by her husband, and in that case no operation was performed. Shortly before I had seen this case which Dr. Brinsmade showed at the Society meeting and I thought that that would have to be the procedure that we would use ultimately, but the woman opposed any operation, so I simply reduced the dislocation and put on a plaster bandage and that was four months ago and after three weeks we removed the plaster and allowed her to use the arm. Since then she has had no return of her dislocation, and I suppose that that was the case with Dr. Brinsmade's patient—that the reduction was not made early and that, therefore, there was no opportunity for the ligamentous structures to heal, because once they heal they seem to be and are quite firm. I hope that I do not have the misfortune with my case that the doctor had with his operative procedure."

Dr. J. Sherman Wight, in discussion, said: "I have seen two cases as a complication of fracture at the base of the radius and they have gone, as far as I know, without any help whatsoever. I do not believe that any mechanical means, such as a nail or any metal placed in there, would give a permanent result. It seems to me that the pressure would, after a while, cause the bone to adapt itself and cause absorption of the bone and, as a final result, it would give way. I think it is remarkable the doctor got the result he did for the long time he did. I do not think that there is anything else but what he has done that would promise any benefit to those cases except to cut off the lower end of the ulna."

Dr. Lewis S. Pilcher, in discussion, said: "A dislocation of the ulna from the base of the radius, forming in itself a serious surgical condition, must be very rare. We are all familiar with it in connection with fracture where, however, the ulna is not so often separated from its junction with the base of the radius, but the base of the radius is torn off and with the ulna is separated from its normal relations, or in many cases, the fact that the ulna likewise is torn away from the radius and is thrust down, we have seen these so many times that we consider it simply as one of the complications of a fracture of the lower extremity of the radius, but dislocation of the ulna itself must be rare. I am sure I don't remember to have ever met with it.

"Now in its treatment, it seems to me that it is a fair question for us to raise whether the weakness or bother incident to the mobility of this end of the ulna is a greater disability than would be the ankylosis and limitation of pronation and supination which would be sure to follow if we put the ulna back and secured its bony union, or practical bony union, for only by such kind of bony ankylosis could one expect to retain it in its place. As has been very well suggested in the remarks already made and by the experience of Dr. Brinsmade in his case, that anything which could be done short of producing a bony ankylosis would still leave the ulna loose and free. Even the rather radical procedure which Dr. Brinsmade used, thrusting a nail through, lasted only a few months and then when the nail broke, away flew the ulna again, and so in all probability will it again if he doesn't get an ankylosis, otherwise he will not permanently cure the disability. That is to say, when in due course of time this nail becomes loose, either by its natural disintegration and breaking or by the loosening following bony absorption, the ulna will be as free as it ever was. Is it worth while, then, attempting to operate upon these cases unless we are sure we are not creating a worse condition than the one for which we operate?"

Dr. Walter Truslow, in discussion, said: "This is to me a very interesting subject. I should like to present a theoretical method of procedure based on similar work in other joints. It seems to me that the accident originally was a rupture of the lower radio-ulnar ligament. Why should we not place in there the "silk ligaments," so-called, that are now being used in paralytic joints to reinforce the parts? Why not actually place, between the radius and ulna, a number of these strands of silk and expect the growth of fibrous tissue, which we know does take place where for instance we anchor up the shoulder-joint or strengthen the lateral ligaments of the knee or of the ankle. It seems to me, with Dr. Pilcher, that one is not going to get any kind of pronation and supination. The anatomy of the lower radio-ulnar joint is such as to preclude the lateral-hinge motion when restrained by the nail. Is not the limited motion demonstrated either the play of a loosening nail or the slight rotary give possible in the wrist joint proper?"

Dr. J. Sherman Wight, in discussion, said: "The method I used in the cases I spoke of was to put a firm wrist band on and that served the purpose fairly well, but they have never had any operative relief at all."

### Double Pott's Fracture. Operation. Patient. Chronic Dislocation of Radio-Ulnar Articulation. Operation. Patient.

*Wm. B. Brinsmade, M.D.*

Dr. Wm. B. Brinsmade, in closing the discussion, said: "Dr. Wight brought out the point that I hoped somebody would bring out. I have no doubt that absorption of the bone will take place. I do not think it will recur as rapidly as it did. As I said, I did not know what would happen if the ulna and radius were fastened together. I did not realize how much motion there would be, so the first nail simply entered the radius without penetrating it. The second nail went all the way through.

"Speaking of Pott's fracture, I would like to add one more thing to the characteristic deformity, and that is the backward displacement which is so characteristic and which needs correction as much as the lateral displacement.

"I thoroughly agree with what Dr. Pilcher said about the subsequent history of the second case reported, but certainly the situation was gone over in my mind many, many times. She was a young woman who was unable even to carry an umbrella with the condition that she was in, without dislocating the wrist. She couldn't open a door knob, she couldn't carry any bundles, and was suffering all the time and had to earn her living and since the nail was put in she has been employed as a house servant and doing the work incident to such occupation.

"I haven't had any experience with Dr. Truslow's suggestion and only know about it from reading. I don't know but that it could be done. Of course, the elastic bands and plaster of Paris had been tried on this girl for some time. As far as we know and as far as the picture shows, there wasn't any fracture in this case. It is a true dislocation. One of the most expert surgeons of New York City tried to take a reef in the ligaments, as he put it, but it didn't do any good and I resorted to the same thing without success. I think that probably next year we may have to do something similar to that.

"In regard to pronation and supination: I am a little sorry I brought the patient out tonight. There is a little blood clot under the scar now. I am sure she had fair pronation and supination and was able to do almost anything since the first operation. I will show this case to the society again in two months."

## Paper: "Gastro-Jejunal Ulcers."

*E. H. Fiske, M.D.*

Dr. Wm. B. Brinsmade, in opening the discussion, said: "I quite agree with the Chairman that this is a very instructive paper and a very interesting one. I suppose there is no surgical subject that has been debated more than the subject of gastroenterostomy for gastric ulcer. I have been present whole evenings when the size of the stoma was discussed, one man recommending a stoma 3 inches long, another 2 inches, another one-half inch and another the size of the Murphy button. Personally, I believe in the stoma being the size of the pylorus.

"In regard to placing the sutures (and I would like to ask Dr. Fiske what his experience is and what his practice is): I think that the advent of a secondary ulcer may have something to do with the position in which the suture is placed. If it is placed too far from the cut edge, the cut edges of the stomach and jejunum are apt to be turned out and leave a raw surface unless some such procedure as the doctor suggested is followed.

"In regard to the alkalies: I would like to mention one thing of great benefit to my patients and that is the administration of alkalies during the night-time. Most of these people go to bed at 8:00 or 9:00 or 10:00 o'clock in the evening and do not get any alkalies until the next morning and then generally they don't get them before breakfast. It seems to me the most important time to take the bicarbonate of soda is when they go to bed and I even think that they should be waked up in the night and get some more. That is the time to give it to them and they don't need it as much, in my opinion, in the day as in the night-time. That is the time when the acidity gets working."

Dr. Wm. Linder, in discussion, said: "Dr. Fiske was kind enough to let me into the secret that the second case he reported was a case operated on at the Jewish Hospital by myself or my associate. I have no recollection of the case.

"The development of gastro-jejunal ulcers in these cases is exceedingly interesting. The causes, while they were very briefly stated, still do not, to my mind, explain it any more today than we can explain the etiology of ulcers. Faulty technic has been one of the causes given, an opening not large enough and substitution of the through and through suture from linen or silk to chromic gut was also given.

"The point mentioned by Dr. Brinsmade that too much tissue should not be devascularized, is well taken.

"It is interesting to note in the last report, about a year or a year and a half ago, from Heidelberg in one of the largest clinics, they have been using the Murphy button and they state that their stoma is most satisfactory, and it is also interesting to note that Murphy prior to that report had sometimes used the Murphy button and sometimes the suture, and right after that report he immediately went back to the button because their careful analysis showed that the button stoma makes a finer stoma and gives a finer scar, and one of the advantages Murphy offers in the performance of the button is that he never loses a case with hemorrhage, which we know sometimes occurs with the suture method; so the argument about sloughing and button does not seem to hold, judging from the results at the Heidelberg clinic and from the hundreds of cases of Dr. Murphy.

"I think Dr. Fiske struck the keynote when he said that these cases are not properly treated after their discharge.

"I always make a large opening, from two and a half to three fingers. Two fingers must easily slip through. As far as approximating the suture goes, you can approximate your posterior suture when it (the stoma) is open, but when you turn the suture on the anterior wall, it is turned in and the ulcers that have been reported are all on the mucosa. Approximation can be done posteriorly, but not anteriorly; so that that ought not to hold.

"As to the after care of these cases: the patients should follow a careful diet for at least one year, there should be administration of alkalies, and tincture of belladonna is absolutely essential to bring about good results from the gastro-enterostomy. Unless we impress this upon our patients, unless we refer these cases back to the family physician and insist upon it, we will get a recurrence of pain. Whether it is a gastro-jejunal ulcer, or whether it is the formation of a new ulcer, we will not get the results that ought to come to us after the performance of gastro-enterostomy. I had one case that I operated on that came back with a gastro-jejunal ulcer. It was a perforation in the protected zone; that is, nature anticipated this perforation and there was considerable adhesion protecting the perforation. When I opened the stomach I found the ulcer on the gastric side, just up to the gastro-jejunal opening. It was a typical punched-out callous ulcer with a fibrous base and ragged overhanging margin (edge) and in that case I originally operated on an ulcer in the mid-gastric region and did a gastro-gastrostomy and did a gastro-enterostomy to give the patient the benefit of alkaline secretion, but he left the hospital feeling so fine that he was absolutely careless in his diet, gorged himself and came back a year after with another ulcer.

"The doctor mentioned the radiation of pain on the left side so significant of gastric ulcer. We know that according to the patients, the points of tenderness are all epigastric. Sometimes they refer you to the left of the epigastrium. On the left side it speaks more for a gastric ulcer. On the other hand, if we stop to think we will realize that when the patient stands up, his stomach is in one position and when he lies down it is in another position, we will appreciate that it is absolutely unreliable, at least in the cases which I personally come in contact with."

Dr. Henry F. Graham, in discussion, said: "There is just one point that I want to mention which was covered by what Dr. Fiske has said, but which I think should be strongly emphasized, and that is the fact that meat broths are just as bad for these patients as meat. I recently called on a patient who had had a gastro-enterostomy performed upon him. It was three weeks after the operation and I asked him what he was eating and found that the thing he liked most was clear meat soups and he said that they seemed to strengthen him. I think that nine times out of ten that is the first thing the mother makes for them, believing it will do them good. I also think a good many doctors in the hospitals are giving them a soup or meat broth after operation. I believe that milk should, of course, be the first thing to be given. Probably in most of these stomachs it does not curdle as the alkaline secretions from the intestine, pancreas and liver, are in the stomach."

Dr. Richard W. Westbrook, in discussion, said: "Dr. Fiske said that in future he would use a chromic catgut stitch for the mucous layer. I think those of us who went abroad this summer and those of us recently at the Mayo Clinic found that the men doing the largest amount of this work, are using very fine silk or linen. Patterson, for one, and the rest of them, too, I presume, feel an absorbable stitch is not necessary. One can produce a better approximation with a fine needle and fine silk than with any other material, and I believe it is perfectly well shown by the large number of cases in which that material has now been used that it has not the disadvantages in this location which the non-absorbable stitch was formerly supposed to have.

"With the Murphy button, results have been very good. Murphy leaves a very clean-cut, stamped-out stoma and one that I believe must heal over pretty quickly.

"If I understood Dr. Fiske correctly, he said there were four ulcers in the jejunum in the first case he operated on, beyond the gastric ulcer. If so, it shows that there was a constitutional condition on the part of that patient which had to do with the development of his ulcers rather than the matter of surgical technic. I believe also that the typical gastro-jejunal ulcer as described by Patterson is one that is hardly traceable to errors of technic, but is more likely due to conditions present in the patient himself, combined perhaps with injudicious feeding after operation.

"One of the easiest cases I think I ever did of simple duodenal ulcer, a gastro-jejunostomy being done, went perfectly smoothly, and the patient was apparently cured of all his symptoms for two or three months and then the symptoms recurred; one of our colleagues who saw him three or four months after the operation felt sure he must have had carcinoma before and that it must have been overlooked, but it was as typical as it could be, both in symptoms and appearance, of gastro-jejunal ulcer. With greater care in his diet, after two years, I am told by his physician, he was well as far as he knew. No further operative treatment had been done. It was a typical case developing after several months. That patient went out of my hands, but I am inclined to imagine that like other patients, he "sailed into" corned beef and cabbage and everything else, as most previously-starved patients will unless carefully watched. I believe that that is an extremely important part of the operation of gastro-jejunostomy—the following up of the patient for quiet a number of months, and I am glad to add my emphasis of that point, which has been so well brought out by everybody tonight."

Dr. William Linder, in discussion, said: "I would like to say one word about this loop turning back the jejunum to the left, which I have practised. I was very much impressed with the importance of that in one case during my visit to Rochester which developed persistent vomiting. In that case a posterior gastroenterostomy no-loop was performed by Dr. William J. Mayo and he opened it up again for persistent vomiting and did an entero-enterostomy with a Murphy button. In visiting the clinics abroad the first one I visited was that of Prof. Kinne in Hamburg and he deliberately took the jejunum, turned it over toward the right and made his anastomosis and has been doing it for years and has had no trouble. I saw the same procedure in Vienna and I spoke to them about it and they said it made no difference at all, that the patients get well."

At this point in the discussion, Dr. Lindner spoke of the question of turning the jejunum to the left and to the right and discussed the standing and recumbent positions, and continued, saying:

"In most of the cases I have seen abroad they had no compunction about putting the jejunum to the left and they really kinked the jejunum, so to speak, and turned it right over and did a gastro-enterostomy (posterior) with the jejunum turned to the left, permanently so, and have absolutely no trouble."

Dr. F. H. Fiske, in closing the discussion, said: "I thank the gentlemen for their interesting discussion and I think some very good points have been added to my paper, particularly the point made by Dr. Brinsmade as to the time that these alkalies should be given because it is in the morning that the acid creates the greatest disturbance. The administration of alkalies at night and in the morning is the most perfect way in which they can be given.

"There is some misunderstanding in regard to the faulty technic. That was not my statement as to the cause of the gastro-jejunal ulcers, except very, very rarely. I said gastro-jejunal ulcers occurring at the opening are the result of the operation and not the result of any faulty technic, and that is a great difference because there is a wound which has been made and which easily ulcerates. It is the result of operation and not the result exactly of faulty technic.

"With regard to the use of buttons: I, of course, don't wish to belittle the Murphy button, for we know it is one of the greatest advances made in surgery, but in the stomach those ends do grow and we know that no button can become loosened without sloughing and that, therefore, there must be an ulcerated surface and that it must be quite extensive.

"If we can get satisfactory results without ulcerative results, with sutures, I believe the sutures should be used, but I feel that the button is a wonderful thing.

"Another valuable therapeutic agent which I left out of my paper is the use of belladonna. It is of great benefit in ulcer of the stomach and in ulcer cases occurring in the jejunum.

"In regard to catgut: I was speaking of the mucous stitch and not of the serous stitch when I spoke of using fine chromic catgut.

"In regard to the loop: there was a misunderstanding. The loop which is made previous to the gastroenterostomy opening differs materially from a looping of the jejunum in the afferent limb and after the gastroenterostomy has been made, because when the gastroenterostomy has been performed by the usual no-loop method the stomach contents naturally pass through the opening and down to the left in the normal position of the jejunum. Now if the jejunum loops back over the gastroenterostomy opening and over the proximal limb, don't you see that you have a kink beyond the gastroenterostomy opening? But if the jejunum is turned before the gastroenterostomy opening is made and simply turned over, then the stomach contents come down and go naturally to the right in the direction in which the loop has been placed and the lumen of the jejunum is not obstructed in any way, and if the jejunum turns back again, you naturally get a kink and a jejunal stasis."

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

JUNE, 1915

## MINUTES OF STATED MEETING, MAY 18th, 1915

The President, Dr. Russell S. Fowler, in the chair. There were 300 present. The meeting was called to order at 8:45 p. m., and the minutes of the previous meeting were read and approved.

### *Report of Council.*

The council reported favorably upon the following application for membership:

James Elmer Baker, 1238 56ht St.; Cornell, 1910; proposed by C. F. Pabst; seconded by Membership Committee, Mar. '15.

Samuel E. Brothers, 96 New Jersey Ave.; P. & S., N. Y., 1890; proposed by W. L. Chapman; seconded by Membership Committee, Apr. '15.

Anthony Cestare, 198 Sands St.; L. I. C. H., 1911; proposed by C. Goldman; seconded by C. F. Pabst; Mar. '15.

Edward R. Dorney, 309 11th St.; L. I. C. H., 1912; proposed by S. J. Post; seconded by Membership Committee; Mar. '15.

Geo. B. Fielding, 350 9th St.; L. I. C. H., 1899; proposed by O. E. F. Risch; seconded by Membership Committee; Mar. '15.

Simon Friedland, 510½ Sixth Ave.; L. I. C. H., 1913; proposed by C. Goldman; seconded by Membership Committee; Mar. '15.

Charles H. Hall, 2933 W. 16th St.; P. & S., N. Y., 1902; proposed by S. J. MacNamara; seconded by Membership Committee; Apr. '15.

Oscar J. Kahn, 78 Lawrence Ave.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15.

Harrison F. Murray, 408 Grand Ave.; P. & S., N. Y., 1912; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Edmund H. Parizot, 467 Garfield Ave., Richd Hill; L. I. C. H., 1914; proposed by C. F. Pabst; seconded by Membership Committee; Apr. '15.

William F. Tyler, 143 Kent St.; Syracuse, 1908; proposed by F. E. Hamlin; seconded by G. D. Hamlin; Apr. '15.

Geo. D. Von Deylen, 336 E. 32d St.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington; Apr. '15.

### *Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Wm. Henry Cook, 749 Bedford Ave.; L. I. C. H., 1912; proposed by E. L. Schaefer; seconded by C. Fulda; Feb. '15.

George G. Fisher, 231 Hancock St.; Laval Univ., 1906; proposed by E. J. McEntee; seconded by J. C. Kennedy; Feb. '15.

Henry S. Friedland, 319 Lorimer St.; L. I. C. H., 1907; proposed by E. L. Schaefer; seconded by Membership Committee; Mar. '15.

Daniel M. McCarthy, 359 Rugby Road; Queen's Univ., 1903; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Thomas M. Reid, Jr., 104 Pioneer St.; L. I. C. H., 1911; proposed by J. J. Sheehey; seconded by Membership Committee; Mar. '15.

Daniel R. Robert, 261 Hicks St.; P. & S., N. Y., 1911; proposed by W. H. Rankin; seconded by H. A. Fairbairn; Mar. '15.

Cornelius A. Schmid, 370½ Pacific St.; L. I. C. H., 1913; proposed by S. J. McNamara; seconded by Membership Committee; Feb. '15.

Esmonde B. Smith, 827 President St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Irving Tran, 179 South 2d St.; Cornell, 1909; proposed by C. F. Pabst; seconded by Membership Committee; Mar. '15.

Max Wachsman, 429 43d St.; Albany, 1901; proposed by R. H. Pomeroy; seconded by Membership Committee; Mar. '15.

### *Applications for Membership.*

Applications for membership were received from the following:

James Bernstein. 4503 13th Ave.; L. I. C. H., 1911; proposed by C. F. Pabst; seconded by Membership Committee; May '15.

Charles E. Rynd, 533 Ocean Ave.; Johns Hopkins, 1911; proposed by L. J. J Commiskey; seconded by F. A. Prendergast; Apr. '15.

Emory M. Wadsworth, 103 McDonough St.; Buffalo, 1898; proposed by S. H. Lutz; seconded by Membership Committee; May '15.

### *Scientific Session.*

Paper: "The Electrical Treatment of Neoplasms." (With lantern slide demonstrations.)
By Wesley H. Wallace, M.D.

Paper: "The Value of Radium as an Agent in Treating Cervical and Vaginal Cancers."
By Curtis F. Burnam, M.D., of Baltimore, Md.

On motion by Dr. Ralph H. Pomeroy, a unanimous vote of thanks was tendered Dr. Burnam.

Paper: "Auricular Fibrillation."
By William J. Cruikshank, M.D.

Discussion. (With lantern slide demonstrations.)
By Marcus A. Rothschild, MD., of Manhattan.

Meeting adjourned at 10:20 p. m.

Burton Harris, M.D.,
Secretary.

## NOTES AND NEWS

CONDUCTED BY BURTON HARRIS, M. D.

**"If you have operated conscientiously on the rich for a proper fee, and on the poor for charity, you need not play the monk, nor make pilgrimages for your soul."—Henri de Mondeville.**

* * *

**A Plea for the Private Patient.**—In the first place, institutions founded professedly for charitable relief, supported largely by the gifts of the benevolent and by appropriations from the public treasury for this purpose, relieved from taxation for this reason, and equipped in administrative, nursing, and professional departments chiefly by unpaid officials whose services are given as a matter of charity, are used as foundations upon which to maintain a department to make money. It is true that a specious excuse for this is afforded by the plea that by the income received from the paying patients it is possible to maintain and extend the charitable work of the institution. To a very large extent, however, the real state of the case has been that the competition among so many institutions for private patients has been such that the prices charged for private rooms have been put at a point so low that little or no profit to the institution has ultimately been derived. It has been possible to offer such private accommodations at the prices charged only by using the plant and the administrative force that was provided for the charitable work of the institution for the money-making department, without making a charge for it against this department. On the other hand, the appreciation of this risk of financial loss from their private rooms has been the occasion of a constant tendency to reduce to the lowest possible basis the attention given by the hospital to these rooms, so that, especially in matters of nursing and food, patients occupying such rooms have often not received the attentions which they had reason to expect; indeed, in the real important matters of hospital care it has been a fact recognized by all hospital surgeons that patients in the public wards of such double institutions were often really better taken care of than those in the private rooms.—*Louis Stephen Pilcher.*

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**Onward Christian Soldiers.**—

"Ghevgheli, Serbia, Dec. 18.—Arrived here at noon and visited a silk factory that has been turned into a hospital, with 2,000 patients. Such a sight of suffering that it makes one's heart bleed! I hope to be able to make the best of things and do something to help.

"Dec. 19.—I have done my first operation here, and extracted a bullet from the neck of a Serbian soldier, and today have dressed the wounds of about 100 patients. The conditions are terrible.

"Dec. 20.—This little town in the southern part of Serbia has a beautiful climate, and we are not exposed to any danger, as the fighting goes on about 500 miles north and the wounded are sent here by rail. The suffering of these poor people is piteous and their endurance marvelous; they let one operate, and not an outcry!

"Dec. 21.—We had five operations today, and took off the legs of three soldiers with gangrene of the feet. To make a round of the hospital, with its sounds and its suffering, is a terrible experience I have just been ordered by Dr Butler to make the rounds of all patients and have them ready in the morning for operation, so expect tomorrow will be a busy day. I have a small room with two other doctors, with no comforts whatever and many rats. Sherman spoke the truth when he said war was hell. I never want my little son to be a soldier."

From the Diary of Doctor James F. Donnelly who died of Typhus Fever on February 24th, while on Red Cross duty in Servia.

* * *

**The Ancient Practitioner.**—The high esteem in which the physician was held is proved by the beautiful words of Jesus, the son of Sirach (180 B.C.), Ecclesiastus (R.V), chapter xxxviii:

"1. Honor a physician according to thy need of him with the honours due unto him:
For verily the Lord hath created him
2. For from the Most High cometh healing:
And from the King he shall receive a gift.
3. The skill of the physician shall lift up his head:

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# HOW SURGERY SHOULD BE TAUGHT IN THE MODERN MEDICAL SCHOOL.*

John B. Deaver, M.D.,
Professor of the Practice of Surgery, University of Pennsylvania;
and
Damon B. Pfeiffer,
Instructor in Surgery, University of Pennsylvania.

IT is obvious that no system of undergraduate instruction in surgery can hope to cover the entire field and send forth the new graduate competent both to advise and practice surgery. The teaching of surgery, therefore, naturally falls into two periods: (1) undergraduate teaching, (2) post-graduate teaching. It is of the first importance that these fields should be properly defined. Much time is wasted in our medical schools in minutiæ that would better be delegated to the post-graduate period.

The interests of two classes of students are to be considered. First, and most numerous are those who are destined for general practice or for the specialties which do not necessitate personal surgical work. The second class is made up of men who will ultimately become surgeons or will perform operations in connection with special lines of work that have more or less important surgical bearing. It is not desirable, however, to attempt to specialize to any extent in the type of instruction to be given to these two groups. The majority of undergraduates do not know, during their student days, to which group they belong. Their subsequent career is yet to be determined either by special ability or liking developed in medical school or by the character of the opportunities which arise after graduation. All students, therefore, must receive a training which will equip them to take either fork when they come to the parting ways. Moreover, a knowledge of the indication for surgery and its possibilities is quite as important to those who leave the actual performance of operative work to others as it is to the surgeon himself. Billroth's remark holds good today, that "the physician who proposes refusing to treat surgical patients and to attend solely to the treatment of internal diseases, must have some surgical knowledge, or he will make the gravest blunders." Up to a certain point the interests of all students in surgery are identical. To teach thoroughly this common groundwork should be the chief object of undergraduate instruction in this branch. The point of common interest is "what to do." "How to do it" is not so important except in emergency conditions, for it matters little whether the physician who knows what should be done knows also how to do it or delegates the actual performance to someone else who may be particularly skilled in this work. As a matter of fact, experience shows that the mortality from surgical conditions is due in far greater measure to ignorance or inattention to the indications for surgery than to the manner in which the actual work is carried out. There is vastly more poor judgment than poor surgery though there is an abundance of the latter. Defects in judgment which are not due to mental incapacity spring from ignorance of established underlying principles and the accumulated fundamental facts of empirical nature. If a medical school can produce graduates who think correctly and advise wisely in surgical diseases it will have accomplished its proper task. The development of surgical sense, of a correct understanding of the role of surgery in prevention and cure, should be the aim of instruction; while methods, procedures and handicraft are secondary considerations necessarily valuable in enforcing the lesson, but to be used only as a means to an end.

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* Read before The Alumni Association of the Long Island College Hospital, Brooklyn, N. Y., June 2d, 1915.

This conception does not in any sense contemplate the elimination of personal and so-called practical work by the student, nor does it seek to debar him from witnessing major operative work. On the contrary realizing that practice is always better then precept and "seeing is believing" it enhances the role of such methods in impressing their proper application to surgical problems. Operative work improperly magnified succeeds only in impressing the student with what may be done. Properly used and explained it lays siege to his understanding and reason, justifies itself and obliges him to consent with us as to the need, indications and benefits of operation. For it is in this matter of consent that surgery is hobbled. We must not forget that the average student shares the laity's aversion to extreme measures when the question becomes personal. He needs faith of the variety that moves mountains. If he leaves medical school without catching the spark it is probable that he will join the already great number of unbelievers and delayers, that inert mass which obstructs the diffusion of the benefits of surgery in early carcinoma, various digestive disorders and the host of diseases, the cure of which depends so largely upon timely surgery. If he goes out into the world feeling that a medical death is a visitation of Providence, while a surgical death is a stigma to all concerned, if therefore he employs the surgeon as a Lord High Executioner in cases brought to the brink of the grave by inaction, if he is willing to accept appalling risks of mortality to prevent operation, instead of a slight risk of operation to prevent mortality, it is largely because the surgical faculty of his School have failed to impress him with the true point of view and the correct role of surgery in prevention and cure. I often think of students on the benches as mourners who need the gospel of the aseptic scalpel to reclaim them from original sin. Conviction and conversion are the first and essential steps, if we would send them forth as missionaries filled with the saving grace of a belief in surgery.

A famous surgeon when asked upon one occasion as to the best recent book on surgery replied, "the latest work on physiology." Bland-Sutton in a recent address on "The Surgery of the Future," pointed out that "In pre-Listerian days the path to surgery lay through the dissecting room": . . . now "it requires little foresight to recognize that for men ambitious to attain high places in surgery, the high road lies through the pathological institute." This forecast recognizes the fact that the mere craftsman is no longer entitled to be called a surgeon, that he must be a biologist, bacteriologist and pathologist. Especially must he know the new science of living pathology, of morbid processes in origin and progress, which owes its existence to the revelations of the surgeon and has done so much to increase our knowledge of disease.

Any course in surgery which does not prominently recognize the changed relation between the head and hand of the surgeon is not modern and is not satisfactory. Students should not be required to familiarize themselves with details of operation in any but the more common minor procedures and major operations of urgency and necessity. A few exceptions to this rule may be made in the case of thoroughly standardized operations for most common and important conditions. Exceptions should be jealously guarded, however, since they encroach upon time more profitably spent upon groundwork. The fundamentals of practical surgery should receive adequate attention to the exclusion of the more highly developed application of the art. It is taken for granted that the prerequisite courses in surgical bacteriology, anatomy and pathology have been covered before or during the early portion of the time devoted to clinical instruction.

The aspects of surgery which should especially engage the students' attention are:

(1) Familiarity with diseases having surgical aspects, their etiology, symptomatology and diagnosis. Their frequency and relative importance; the prognosis, immediate and remote; and the respective values of medical and surgical treatment.

(2) The principles of surgical treatment. To produce thinking men it is necessary to give them an insight into the rationale of the art. This should be done by demonstrations as well as by lectures whenever possible. Such facts of surgical physiology as can be shown to classes or groups will go a long way in establishing a practical working grasp of the subjects illustrated. The phenomena of shock are easily demonstrated and are impressive. So also are the consequences of intestinal obstruction and the student who has observed the rapid changes in the bowel and the severe toxemia that early manifests itself in obstructive conditions will need but little in the way of precept or urging to arouse him to the necessity of prompt recognition and equally prompt action in such cases.

(3) A general knowledge of the procedures, operative or otherwise employed in surgical treatment. Actual demonstrations should be given, personal work allotted and detailed familiarity required in particular instances to be chosen because of their common and necessary character or with a purpose to illustrate important principles. Examples of such procedures are, paracentesis, the uses of saline solution, subcutaneous, intravenous and intrarectal, bandaging and dressings, plaster, splints and extensions, drainage, anesthesia, general and local, antisepsis and asepsis, artificial respiration, control of hemorrhage, hypodermatic medication, thermal agents and counter-irritants, ligatures and sutures, postural uses and devices, preparations for operation. Operative details should be taught in ligation of main arteries, incision of abscesses, suture of wounds, the handling of com-

pound fractures, circumcision, tracheotomy, amputations, herniotomy, repair of intestinal wounds and perforations, gastro-enterostomy, cholecystostomy and appendectomy.

The methods of instruction to be adopted by each school depend in very considerable degree upon the type of students, which in turn depends upon the situation, reputation and requirements of the school. Schools which admit only men of more advanced preparation who are usually somewhat older and have a liking for and familiarity with the student life can successfully employ the "University method" of offering correct guidance and adequate opportunities for instruction, in the confident anticipation that results will come from the conscientious application of the students. Some men will lag under this plan but this disadvantage is more than balanced by the great benefits of the method to the average and stronger men.

On the other hand, schools whose student body is made up chiefly of raw recruits, who are entering at a very early age upon the study of medicine, without adequate preliminary grounding or understanding of the demands made by the thorough study of modern medicine, must teach down to its average. Less can be taken for granted and more must be required. A more rigid curriculum must be framed and more prods in the form of quizzes, tests, and examinations will be necessary if a fair average result of knowledge and efficiency is to be reached. Students of exceptional ability suffer by being cramped into such narrow limits, but, as they are in the minority as a rule, they must submit to the good of the majority. Experience has shown that in later years such men frequently rise to eminence, which must be attributed to this individuality rather than to their poor start.

In an intermediate group may be found many of our colleges which are raising or have raised their requirements to a point which brings together a rather heterogeneous group of men, some of whom enter with advanced preparation while others have complied with the letter of the law in entrance requirements, but are still in their swaddling clothes so far as being able to study is concerned. For such schools the effort to preserve a proper balance between what is good for one group but unsatisfactory for the other is a difficult problem, and may result in such a lack of well-defined plans as to suit neither. Homogeneity of the student body should be the aim of those having in charge the admission of students to our medical colleges, and the curriculum and methods of teaching should take their cue from the type of student and a very definite idea of the way in which he is to serve the community. It is at the present time neither possible nor desirable under the differing circumstances of population and mode of life in the United States to place all schools upon the higher plane of requirements and instruction. This would necessitate homogeneity of the population which is incapable of regulation.

In any event, if it be granted that as Aristotle said, "the direction in which education starts a man will determine his future life," and, if it be further conceded that however thorough the student's preparation, however good his instruction, however excellent the opportunities and facilities afforded by his school, nevertheless, at graduation he is a babe whose possibilities depend entirely upon his subsequent development. It must also be realized that any plan of instruction which is designed to take up the student bodily and carry him along willy nilly to the moment of graduation, while it may leave him in possession of what his instructors have found by experience to be the most essential practical parts of medical knowledge, nevertheless leaves him stranded like Moses in the bulrushes, with all the possibilities of development into a man but without the habit of self-reliance, the vision to discriminate, the ambition to energize and the ability to execute alone.

Teaching, to attain its highest function, must be more than instruction in the parts of knowledge. It must be inspirational and it must show the student *how* to acquire knowledge. The trend of events is therefore inevitably towards the "university method" of teaching.

More specifically, surgical instruction is carried on through the medium of:

1. Didactic lectures.
2. Dry clinics.
3. Operative clinics.
4. Ward classes.
5. Ward work.
6. Dispensary work.
7. Conferences and recitations.
8. The performance of operations upon animals and the cadaver.
9. Surgical research groups.
10. Collateral reading.
11. Analysis of cases and reference work.

I. Didactic lectures should be reduced to a minimum, but not discarded. The existence of numerous text books makes any attempt to be encyclopedic an enormous waste of time. As a means of supplying perspective to the groping student they are invaluable. They should buoy his course through the sea of detail. They should aim to develop the reason rather than the memory and should vitalize and inspire his work rather than attempt to supply a syllabus of all needed information.

II. The dry clinic or exhibition of important and interesting cases with accompanying comments is invaluable. In them the student has an opportunity to observe the manner in which the experienced mind works and by example sets his own working along similar lines. In the development of the case also much general knowledge may be given in a way that tends to remain because of the concrete illustration.

III. The old-fashioned operative clinic to a body of men has outlived its usefulness. Its inspirational value was great and it still possesses some advantages of this sort. Though formerly regarded as a means of demonstrating technique and methods of operation, its chief value today lies in the opportunity which it gives of making a complete exposition of a case including the visual demonstration of the lesion. It follows that only those who can see derive the greatest benefit from the operative clinic. That groups should be small enough to be accommodated close to the table, that cases whose interest is purely operative should be few, and that such clinics should be given only by those who possess the gift of exposition as well as the ability to operate. Time can be economized and much better results achieved for the student, if the case is turned over to a competent assistant for the completion of the technique while the surgeon makes a discussion of the general and special aspects of the case.

IV. Ward classes, or visits with small groups of students should be largely used, as in this way opportunity is given for direct examination and informal discussion of the various aspects of surgery and for a direct contact with the student that is helpful to the instructor in estimating his man, and for the student in transmuting what he has heard or read into actual practice, a most difficult kind of alchemy to the average man. The special subjects for demonstration should be divided up among the men who conduct ward classes in order that, as occasion arises, they may be carefully and adequately considered. This also locates responsibility for necessary matters of instruction which otherwise might easily be overlooked. The obverse of this is to define within certain limits the respective fields of instructors in order that continual overlapping on common subjects may be avoided.

V. Ward work. If opportunity exists it is well to assign a certain amount of work in connection with given cases to each student. He may be held responsible for knowledge of their condition and in general for the diagnostic and therapeutic aspects of the disease. This may be drawn upon in ward classes.

The importance of requiring the student to follow actual cases from admission to discharge is great and the interest of the student and the force of the instruction is much increased if he is allowed to have a minor assistancy in the operation. When occasion permits he may be allowed to attend to the after treatment, removing stitches, applying drainage, etc. The early impressions of work of this sort remain forever.

VI. Routine work in the dispensary should be required of all students. In every active dispensary the more common types of ambulatory surgical cases are numerous and with competent and interested instructors there is no form of surgical treatment which is more valuable. Minor operations and anesthetics may be demonstrated with advantage here.

VII. Conferences and recitations should proceed hand in hand with lectures, clinics and practical work in all important subjects. They are valuable alike in clearing up hazy points for the better students and in prodding the weaker brethren. They should serve the purpose of a review, and must not be allowed to degenerate into a question and answer primary recitation.

VIII. A certain minimum of operative work should be required of all students and in our opinion at least a portion of this should be carried out upon the living animal. It is high time that the community should recognize what they all know and the vast sane majority will admit, that we are engaged in preparing men who will deal with lives. We are obliged to guarantee to the best of our ability that in certain emergencies they will not be found wanting. There is only one way to learn how to do a thing well and that is to do it. Surgery on the cadaver is so different from surgery upon the living that it is a poor and unsatisfactory substitute. It has a field in demonstrating the A, B, C's of technique and the anatomy of the parts, but work upon the dead can never reproduce the conditions that must be met in work upon the living. It is morally wrong for the student or graduate to learn technique at the risk of human life. This is a form of experimentation which we cannot countenance. It is our right, nay more, our duty to use suitable lower animals for this purpose and we cannot believe that we will not be supported in this attitude. The people entrust us with their lives because of their belief in our morals and principles. Will they not also entrust us with this problem which is so closely related? Let us join forces, put our shoulder to the wheel of progress and we will find that when the people express their views it will be found safely and unmistakably on the side of truth and right. The opposition to the use of animals is comparable only to that blind objection to the dissection of the human body which hampered progress for years, and which if not overcome would have precluded all the development of surgery, as happened in China where the anatomy of the arteries was partially worked out by the chance wounding of the vessels in acupuncture.

Any sensible person who is so unfortunate as to require an operation would prefer to have it done by a man who had mastered its details upon the animal rather than entrust himself to one who had no operative experience. It is true that "a good cause can sustain itself upon a temperate dispute" but we have been too lax to argue the question. It is true that we have not trusted to the common sense of the people in vain, but it is time now to claim the benefits to be derived from a proper extension of this work. Animal experimentation in simple form by selected students under supervision has justified itself and should be continued.

IX. Collateral reading.—Every medical school should have a reference library within easy access of the students and the habit of consulting references should be encouraged in every way possible. The use of the Index Medicus and of the monumental Index Catalogue of the Library of the Surgeon General of Congress should be familiar to every student. The importance of monographs and original journal articles should be emphasized. The need of French and German will be made clear and those who are fortunate enough to possess a reading knowledge of these languages should be enjoined to keep up by regular perusal of foreign journals, if only for a few minutes each day. The habit of amplifying what one has seen or learned during the day by reading is probably the most valuable and the most neglected feature of education in our schools.

X. Like collateral reading a requirement of a certain amount of small original or analytical work on the part of the student would be most valuable in its educational aspect, and in many instances in its influence upon the future productiveness of the student. One method of accomplishing this is the formation of student societies under the patronage of a member of the faculty in whose meetings interesting cases are detailed and discussed, while papers upon miscellaneous medical subjects are composed and read. The Undergraduate Medical Association of the University of Pennsylvania every year presents a full day's program consisting of papers which are the outcome of literary or experimental research. It is from the men who thus get their start in productive work that the leaders of the future will be recruited.

In the last year of study several electives should be offered in all major branches. By this time certain men have developed a definite bias towards medicine, surgery or research, and it is well to offer opportunities for more advanced work or intensive study in the branch to which they are especially attracted. Surgical electives may be offered in the laboratory of experimental surgery or by the clinical men in subjects of special interest, such as rectal examinations and diagnosis, abdominal diagnosis, etc.

The proper correlation and assignment of these various functions in the way of time and personnel of the instructors is a matter of great practical difficulty. The direction of the various activities is a matter of executive rather than of surgical ability, though it goes without saying that a full surgical knowledge is necessary to appreciate relative values and properly apportion the work. The successful working of any scheme that may be devised will depend largely upon the organization of the surgical faculty and the fidelity with which the various roles are carried out.

In the space of this paper we have been unable to do more than to sketch briefly the components and spirit of the modern course in surgery. In our general conclusions we have had the benefit of the experience and advice of the John Rhea Barton Professor of Surgery of the University of Pennsylvania, Dr. Edward Martin, and the opinions here presented may be considered as representing in outline the practice and the aims and ideals of the surgical instruction in the University. It is our belief still that "of a good beginning cometh a good ending" and that if we teach men to regard surgery correctly as a science rather than a mechanical art, to estimate its values and not over-estimate its dangers, to stand firmly upon conviction and not vacillate from weakness we may rest assured that whatever path they choose they will render the maximum service.

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## CARCINOMA OF THE INTESTINES.*

H. Beeckman Delatour, M.D.

Brooklyn-New York.

I will not present a paper. I merely want to present some specimens and make a few remarks on the question of carcinoma of the intestine. Carcinoma of the intestine is certainly not a rare disease or rare condition and its gives symptoms sufficiently plain and definite if we go into the history carefully to make a diagnosis much earlier than we usually do.

At present there is a general crusade looking to the early operation for carcinoma. The breast and stomach particularly have been drawn to our attention as the site of carcinoma and we are constantly looking for the disease in these two organs, but in the intestinal tract beyond the stomach much less has been said of the occurrence of cancer, but here it is certainly not a rare disease; maybe not as common as in the stomach, but it comes to us quite frequently, but, as a rule, it comes to us rather late and the removal of the disease is not followed by cure. It does seem, though, that if we get these cases of malignancy of the large intestine in a fairly early stage we have reason to look for a cure and a lasting cure. I have one case now eight years after a removal of the rectum for carcinoma. I have a case nine years after removal of the cecum for carcinoma. I have several cases of intermediate periods. I have more cases, unfortunately, that don't come under the head of being with us.

This specimen was taken from a lady 56 years of age who first came under my care complaining of distress in the left iliac fossa with the passage of mucus and blood. Proctoscopic examination showed numerous polyps on the mucous membrane and I removed one of those and it was declared non-malignant. Dr. Merzbach saw this case on a number of occasions and through the proctoscope removed several of the growths and on each occasion there was a report of non-malignancy. About a year afterwards this case began to show more acute symptoms and on examination a mass could be felt in the rectal wall, just posterior to the cervix. There was no obstruction to the bowel. It did not encroach on the lumen of the bowel sufficiently to interfere with the movement of the bowels. In a couple of weeks it had increased considerably in size. The uterus had become immovable; that is, the cervix, so the condition then was very evidently one of malignancy. Operation was proposed and consented to and I did what I believe is the only right and proper operation for carcinoma of the rectum; that is, a thorough and complete removal and the production of an artificial anus on the abdomen. I am convinced, from my experience, that it is in only a small proportion of cases that a successful result is obtained by removing the bowel from below. In this case I made an abdominal incision and found the growth, as I have stated, at the point where the rectum lies directly back of the cervix, and the rectum and uterus were so intimately connected that it seemed to me that the disease might possibly have already invaded the uterus. Both Dr. Marzbach and I felt when we saw the case in the early part, from the history and symptoms, that this papillomatous condition of the mucous membrane might extend high up in the rectum. As far as the proctoscope would go these growths could be seen; therefore, at operation I decided to go well up and remove as much of the sigmoid as possible. I made a high division of the sigmoid and dissected out the bowel from above including with it the uterus and ovaries and vagina. By the time we had gotten down into the pelvis the patient's condition was quite serious and I didn't feel justified in making a complete operation finishing it from below at that time and I simply placed the whole mass within the pelvis, put a laparotomy sponge about it and went ahead and made my artificial anus and closed the abdominal wound. Three days later, under morphin, hyoscin and cactin, I made an incision in the perineum, encircling the vagina and rectum, and removed the entire mass very comfortably. She made a good recovery, rather slowly. She was in a very feeble condition at the time of the operation, but it took place in June a year ago and it is now about eighteen months and there are no signs of a recurrence. There was more intestine removed really than is shown there.

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* Presented before the Brooklyn Pathological Society, December 10, 1914.

The second case was a lady 50 years of age who gave a very bad family history of mailgnancy. The mother died of tumor of the brain, the father of cancer of the rectum, several uncles died of cancer and one or two aunts died of cancer of the breast. It seems as though all her family had died of cancer. For twenty years she had suffered with constipation. She said she hardly knew what it was to have a movement of the bowel without some assistance, but for eighteen months she had been suffering severely from constipation and with pain in the lower bowel and rectum with blood and mucus filling the stool. On examination, just within the sphincter, ones finger passed into a cavity which was soft and irregular in outline and bled very easily, evidently a cancer of the lower section of the rectum, which passed apparently outside of the rectal wall. I hesitated at first in this case to advise operation because it seemed to me that the growth had gone through the rectal wall and into the pelvic tissues and in such a case it is almost impossible to completely eradicate the disease, but I had only recently seen a case on which I had refused operation a year ago because of the apparent extent of the disease and the poor old lady was still alive and in a most horrible condition. I cannot imagine anything worse than the condition that woman was in, so that I felt in this case I must offer the woman operation, which she accepted, and we did a similar operation, not removing the uterus or the vagina, but making an artificial anus on the abdomen and removing the entire bowel from the sigmoid down, including the anus. I believe it is very important in these cases to go well into the sacrum and remove as much of the fatty tissue that lies back of the bowel as possible. There is a great mass of it there and I believe we should be very careful to go well into the hollow of the sacrum and get out all the tissue there and that cannot be done as satisfactorily from below as from above. Of course, in the Kraske operation one can do it pretty well, but I think we can do a more complete and thorough operation by the combined abdominal and perineal method than by any of the methods from below. This growth was removed, the end of the descending colon was placed in the abdominal wall and sutured there, the abdominal wound was closed and the patient put in the lithotomy position and the rectum removed from below as in the previous case. This patient was operated last August and made a nice recovery and we had little or no trouble with her and up to this time she is well.

As to the production of an artificial anus: I thoroughly believe that a patient is much more comfortable with an artificial anus in the abdomen than he or she is with the opening in the buttocks or on the perineum when there is no sphincter control. The patient can take much better care of himself with the opening on the abdomen than he can anywhere else. I have done the operation a number of times from below and I know those people are pretty uncomfortable.

A few years ago I devised a cup for wearing on the abdomen which a number of patients are wearing now and they find it very comfortable.

Here is another case which represents a growth in a different position. A colored woman, 33 years of age, was admitted to St. John's Hospital on the 24th of last November, complaining of severe pain in the region of the cecum. She was sent into the hospital as a case of appendicitis, but there was only a slight rise of temperature. There was no abdominal rigidity and none of the characteristic signs of an appendix, but in the right iliac fossa there was a soft boggy mass which gave the feeling of a cecum loaded with fecal matter. It was tender to the touch and could be moved about. She had a white cell count of 15,000 and 89 per cent polynuclears. Enemata were given and a large quantity of fecal matter was removed from the bowel, but after the bowel was thoroughly cleaned out one could make out in the right iliac fossa, or rather just above the crest of the ilium, a small rounded mass which apparently was in the outer side of the intestinal wall. Then the question arose as to whether there was a new growth in the intestine or whether it might be an inflamed appendix or a subperitoneal growth attached to the intestine or an appendix simply adherent to the intestinal wall, but I believed that it was a case of malignancy of the bowel. On opening the abdomen we found this mass to occupy the circumference of the ascending colon about midway between the tip of the cecum and hepatic flexure. We decided on resection and made a section of the ileum about three inches from the ileo-cecal valve and a section in the transverse colon below the hepatic flexure. We closed in the end of the transverse colon and implanted the end of the ileum into the transverse colon and then proceeded to dissect out the entire cecum, ascending colon and the terminal portion of the ileum. It was necessary to take in the cecum and ileum in order to get a small mass of glands which was situated in the angle between the ileum and cecum. This patient has made a splendid recovery and is about ready to leave the hospital.

These three cases have all recovered. As I say I have a number of other cases that have recovered, but it is a thing that should be seen early and operated early if we expect to get good results.

Dr. Thunig has kindly consented to present the microscopic slides of these cases in order that you may see the pathological condition. I am sorry the slides didn't show up better but in closing I would like to add one or two words. These people if not operated, live for months and they lead a mighty uncomfortable existence. I have passed up a good many of them without operating because of the repulsive idea of producing an artificial anus. Since my patients have been wearing this cup I have felt differently about that and they, too.

I want to make a very strong plea for the more frequent use of the examination of the rectum in patients who complain of hemorrhoids and conditions referable to the lower bowel. It is too frequently passed over. With the rubber glove and rubber finger cot one need not feel the hesitancy we used to when we had to make an examination with unprotected finger. I have had a number of cases referred to me as cases of hemorrhoids that were actually of carcinoma just within the sphincter. They had never been examined. The history of painful defecation and of bleeding afterwards was taken to represent piles and people have gone to physicians and said they have piles and without examining them they have been referred for relief and on examination carcinoma was discovered. I think we ought to be perfectly willing to make a rectal examination in all these cases with the finger if we are not prepared to make an examination with instruments.

# PRIMARY SARCOMA OF THE OVARY.*

## Case Report.

W. L. Wolfson, M.D.,
Brooklyn-New York.

UNUSUAL interest in this case of primary sarcoma of the ovary that I have the pleasure of presenting to the society this evening is due primarily to the rarity of this type of tumor, secondarily to an operative incident that I shall direct attention to later in the history of the case.

Authentic cases of sarcoma occur in five per cent of ovarian tumors; there is a bilateral involvement of the ovaries in 11% of the cases. It may occur in any decade of life, but the predominance of the cases are in very early childhood, 50% of them occurring before the age of five. It is noteworthy that most cases before adult life are of the round cell type of sarcoma, those after that age have the spindle cell content.

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* Presented before the Brooklyn Pathological Society, January 14, 1914.

*History:* C. S. Age 19, Roumanian, single, was admitted to the Jewish Hospital in the service of Dr. Polak, November 7, 1914. Family and previous history were negative.

*Menstrual History:* Menses began at 13, regular every 28 days. No pain.

*Present Illness:* Began shortly after her last menstruation, which started on August 29th (five weeks ago). The patient remarked that her adomen began to enlarge; this increase became alarmingly rapid and progressively worse.

Pain did not become marked at any time, and it was only recently, within the past two weeks, that she did complain of irregular attacks of sticking pain directed toward the right and left iliac regions. There is no definite history of any rise of pulse or temperature; no gastro-intestinal disturbance other than vomiting once or twice during an attack of pain.

In view of the gross pathological lesions found at the time of the operation it appears remarkable that the patient suffered so little disturbance.

*Physical Examination on Admission:* A young adult, small frame, poorly nourished, dyspnoeic, and evidently ill.

In the upper and outer quadrant of the right breast there is a very firm and definite mass, the size of a small orange. The skin is movable above it, but the tumor is mobile in its relation to the deeper underlying structures.

The abdomen is greatly distended, more especially marked in the lower central part, where an apparent bulge makes that area distinctly prominent. Superficial dilated veins in all directions are visible.

A large, firm mass is easily palpable in the lower central and left side of the abdomen, apparently extending upward from the pelvis to 3 c. m. above the umbilicus. Percussion above the umbilicus elicits tympany, whereas below it there is flatness extending into both flanks. A fluctuation wave was easily demonstrated.

A recto-abdominal examination emphasized the abdominal finding of a very large tumor. The uterus by rectum felt small, its position high up and forward.

Both lower extremities were moderately edematous.

*Operation:* An exploratory laparotomy was made three days after admission. Several gallons of sero-sanguinous fluid escaped when the peritoneum was incised. In view was a solid tumor of the left ovary, the size of a child's head. The surface was pinkish gray and finely granular in appearance. A similar tumor of the right ovary was the size of a hen's egg. Both tubes were tremendously hypertrophied and edematous. The uterus was not involved. Metastatic involvement of the perirectal tissues and the ileum had taken place.

In an attempt to deliver the larger of the tumors through the abdominal incision, for a more thorough investigation, the upper half abruptly snapped off with surprising ease, leaving a broad surface of brain-like appearance, the bleeding from which was very profuse and rapid. It necessitated immediate control of the hemorrhage, accomplished by clamping off both uterine arteries. A rapid hysterectomy and bilateral salpingo-oophorectomy was then done without any unusual difficulty.

The post-operative course was uninteresting, the patient lost strength steadily, and succumbed eight days later.

*Pathology:* Specimen that was sent to the Pathological Department was reported by Dr. Blatteis to be primary sarcoma of the ovary. I append his report:

*Microscopical Examination:* Under Low Power: The specimen consists of numerous small round cells varying in size. The distribution of the cells is constant, except in small areas, where there is an increase in the amount of connective tissue present.

The connective tissue is scattered throughout the specimen, lying in strands of different thicknesses; the distribution is irregular. In those places where the connective tissue is present to a noticeable degree there is a tendency toward an alveolar arrangement.

There are a number of small blood vessels present; some of the blood vessels are empty, others are filled with blood.

Under High Power: The cells can be divided by their appearance upon close study into two types.

(a) Small cells varying in size from one to three microns.

(b) Large cells; these are from three to five microns in size.

(a) The small cells are closely packed together. The individual cell consists of a large vesicular nucleus inclosed in a narrow ring of cytoplasm which assumes a poor stain. The nucleus varies from a pale homogeneous appearance to one that has deeply staining, definite, chromatic bodies. The very smallest type of cells, those about one micron in size appear to consist entirely of nucleus with an ill-defined cell body. The nuclei of these cells are homogeneous in coloring. Many cells show definite evidences of mitotic activity.

(b) The second type of cell is the larger. They are few in number, ranging from one to six in a field and scattered about irregularly. The nuclei of these cells are only one-third the size of the cell, the chromatic net work staining very deeply in parts, but lighter in others. These nuclei show evidences of marked mitosis. The protoplasm of the cell is homogeneous in character, and takes the strain well. Some of these cells appear to contain as many as four nuclei. The connective tissue is fairly constant and suggests the alveolar arrangement.

Blood vessels are scanty in number but scattered throughout the specimen are numerous red blood calls.

*Diagnosis:* Primary round cell sarcoma of the ovary (alveolar type).

# THE TREATMENT OF INOPERABLE CANCER.

## Abstract of Original Paper.

**Silas P. Beebe, M.D.,**
New York City.

THE Treatment of Inoperable Cancer is the title of a most interesting preliminary report devoted to a new treatment of malignant growths, by Silas P. Beebe, M.D., of 25 East 60th Street, New York City, Professor of Experimental Therapeutics at the Cornell University Medical School and visiting physician to the General Memorial Hospital. Doctor Beebe estimates that 75,000 persons die annually in the United States from some form of cancer, and that at least 80 per cent of all persons suffering from malignant tumors, eventually reach the inoperable or incurable stage.

It is with some degree of trepidation that Doctor Beebe ventures to put before the medical profession a new method of treatment for inoperable cancer, and hopes his action will be judged solely on the data presented in his clinical report, as appeared in the New York Medical Journal of May 15, 1915.

Professor Beebe gives to Alexander Horovitz, Ph.D., an Austrian biologist and chemist, the credit of discovery; the technique and present development of this method having been evolved by Dr. S. P. Beebe and Dr. J. Wallace Beveridge.

Dr. Beebe in reporting his investigation of the patients treated at first, as examined by him before any were admitted to the General Memorial Hospital, stated that some of the patients had large, open, ulcerated tumors which previously had been the seat of active infection accompanied by the disagreeable odor associated with such a condition. Under this treatment, these infections were markedly influenced and the odor almost entirely disappeared, which impressed him sufficiently to warrant the method being given a thorough trial at the General Memorial Hospital.

The therapeutic agent employed in this treatment is a complex one, and it is believed that it has not been heretofore employed in the treatment of cancer. Doctor Beebe and Dr. J. Wallace Beveridge, working in conjunction with Dr. Horovitz, after many months of clinical experimentation, have been able to use the product as an extract administered subcutaneously. In referring to these clinical experiments, Dr. Beebe says: "At the point of injection in normal tissue an active local reaction is produced; this reaction is evidenced by swelling, redness, heat, and tenderness. Then follows a general leucocytosis with a relatively high lymphocytosis, some rise in temperature, and occasionally, a chill of varying intensity and duration. Now if the local area which receives the injection is examined microscopically, there are found all the characteristics of a moderately acute inflammatory reaction with a relatively large leucocytic infiltration. When such extracts were injected directly into a transplantable rat sarcoma, the characteristic reaction followed and was accompanied by a peculiar necrosis of the tumor cells with complete regression.

When the skin over the tumor, prior to the injection, is ulcerated, the affected area rapidly degenerates and a mass of necrotic tissue is discharged, followed by healing, while if the skin is not broken or ulcerated, the reaction following the injection produced a marked infiltration of serum and leucocytes, particularly around the borders of the tumor, the tumor itself was gradually absorbed, and there was an apparent complete restoration of normal cellular conditions."

Subcutaneous injections of this extract have to a considerable extent displaced the direct tumor injection, having the obvious advantage of permitting a more certain dose, of bringing this therapeutic agent directly in contact with the growing order of the malignant cells, and producing in the depths of the tumor rather than on its surface an intense reaction, which appears to be unfavorable for the continued growth of the tumor. When these injections were first begun in human subjects, they were always confined to the growth itself. More recently they have been given subcutaneously in the arm, and it has been interesting to note that when so given there has been observed fairly definite reactive responses in the growth; these reactions in the growth are evidenced by swelling, temporary increase in pain, followed a few hours later by a considerable relief from pain, and in some forms of tumor by softening of the growth and a gradual diminution in its size.

Doctor Beebe's paper contains a report of two groups of cases, the first under his personal observation at the General Memorial Hospital, in which X-Rays from a Coolidge tube formed a part of the treatment which was not so successful and satisfactory as in the second group of cases under the supervision of Dr. J. Wallace Beveridge at the Polyclinic Hospital. The latter group was treated entirely by hypodermic injection of the extract, no other therapeutic measures being used. The following two cases cited are taken from Dr. Beebe's preliminary report, viz.:

Case XI. Man, aged fifty years, had recurrent colloid carcinoma of the rectum. Kraske operation two years ago. In July recurrence became troublesome, and at the time of his admission to the hospital there was extensive involvement of the tissues, in and about the rectum and including the base of the bladder. Patient had severe pain, great difficulty in defecating. It was impossible at the time of his admission to pass a rectal tube, and the bladder irritation was so severe as to cause almost constant tenesmus. Injections at the hospital were made directly into the growth. During his stay in the hospital of six weeks, sixteen injections were made; following the earlier ones, there was marked reaction accompanied by rise of temperature and an occasional chill. X-Ray examination revealed involvement of sacrum. Large broken down masses of tumor were discharged. Pain and irritation about the base of the bladder gradually diminished. The swelling and pain about the sacrum entirely disappeared, the tumor masses in the rectum were in part absorbed and in part broken down, and were discharged. At the end of six weeks the patient left the hospital, free from pain, with normal control of bladder. Patient was passing formed stools, the rectum admitted forefinger easily without pain and tumor masses could not be felt. After leaving the hospital, the patient had a few injections in the arm, he continued to gain in weight and strength, and his general condition continued to improve.

Case XV. Woman, aged fifty-one years, had a recurrent inoperable carcinoma of the breast. Recurrence involved the fifth and sixth rib, at the lower point of the old scar. Mass about three inches in diameter very hard, the surface red. Some exudate appeared at the apex of the growth. Patient had intense pain along the left arm and shoulder, including the left side of the neck. Left arm markedly edematous and painful to touch. Edema extended to the region above the clavicle. Patient had had X-Ray treatment for a short time prior to admission to hospital without effect. Treatment was entirely by injection into the tumor and into the arm on the right side. At the time of her admission and previously, patient had temperature of 100° to 101° F., which finally became normal. During the period of twenty-six days at the hospital, patient received eighteen injections, two being in the right arm. After her discharge, patient continued to receive the injections at weeky intervals into the right arm. When the patient left the hospital the induration had entirely disappeared, edema in the arm and above the clavicle had been absorbed, and she had no pain. The central portion of the tumor mass was marked by a scab, about a quarter of an inch in diameter, representing a point of an old sinus through which most of the tumor mass had been discharged. After she left the hospital, this area entirely healed, the patient returned to work and was subsequently entirely well.

Prof. Beebe, in summing up his observation states: "In spite of the somewhat complex and unusual character of the remedy employed, the evidence warrants further use of this method of treatment. In judging the merit of a treatment for inoperable cancer, it is probably wise to discount such matters as the relief from pain and the improvement of the general physical condition, because, while these matters are of much concern to the patient, they are to a considerable degree subjective in character and may to some extent be expected to follow the employment of any new method which stimulates the patient with faith and hope.

While Dr. Beebe has been interested in the treatment of cancer patients for a number of years, he has not heretofore seen such consistent improvement, of the character mentioned, follow in the type of patients cited by the use of other known remedies. If an actual diminution and regression in the bulk of malignant tissue is taken as a criterion by which to judge of the effect of this remedy, it is the writer's opinion that the evidence presented can lead to but one conclusion.

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# PAPILLOMA OF THE BLADDER AND ITS TREATMENT.*

B. W. Seaman, M.D.,
Rockville Centre, L. I.

IN presenting this paper on papilloma of the bladder it is my purpose to summarize the etiology, symptomology, prognosis and treatment, and to call attention to the fact that to neglect their early diagnosis and treatment, in the majority of instances, means, sooner or later, their degeneration into malignancy.

The term "Papilloma" as applied to tumors does not refer to their structural characteristics but rather to their external appearance. In fact any tumor that projects above the surface of the structure from which it originates and has a villous-like appearance may be termed a papilloma.

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* Read before the Queens-Nassau Medical Society at Jamaica, Dec. 1, 1914.

Of papillomata of the bladder there are two kinds: (1) fibrous papilloma, (2) villous papilloma.

Fibrous papilloma is purely benign and may originate from any point on the bladder wall. It is pedunculated and seldom exceeds an egg in size. It has no particular clinical significances, seldom produces symptoms and is as a rule discovered during the course of an examination for other conditions.

Villous papilloma, with which this paper deals, is benign at first and may remain so for years without producing symptoms, but, sooner or later, manifests itself by a spontaneous hematuria.

Papilloma is of fairly common occurrence, is found most often at middle age and is more frequent in men than in women.

Grossly it varies in appearance. Usually pedunculated, it has radiating from its pedicle villous prolongations of varying shapes and length, sometimes long and threadlike, sometimes shorter and thicker and spread out like fingers, others bifid and still others so short and closely packed as to resemble a cauliflower in appearance. Very rarely they are sessile; this variety is the most prone to malignant degeneration. Their color varies from a glistening white to a muddy red. Structurally the villi consist of a central core of vascular and mucoid tissue covered with one or two layers of cylindrical epithelium. The base is of a more complex and denser structure and contains connective tissue. It is in the base that malignancy first manifests itself.

The site of origin is as a rule at the trigone near one of the ureter openings.

At first these tumors are single but have a marked tendency to multiply, small implantation growths often being seen surrounding the original tumor. In all probability these new growths are propagated by contact of the villi with the surrounding mucous membrane.

*Symptoms:* The presence of villous papilloma in the bladder does not necessarily produce any discomfort and more often than not there is a complete absence of symptoms until the tumor has reached an advanced stage.

*Spontaneous hematuria,* coming on as a rule, after exertion, in the majority of instances, initiates the trouble. This as suddenly disappears to reappear at some future time, these periods of intermission shortening as the growth progresses but may extend over a period of many years.

Occasionally a portion of the tumor will break off and become lodged in the urethra, producing a retention of urine.

Very rarely symptoms suggestive of vesical calculus are present.

No constitutional symptoms are noticed unless an anaemia exists from too repeated bladder hemorrhages, or malignancy is present.

*Diagnosis:* Spontaneous hematuria is suggestive and should be an incentive to further investigation. The presence of portions of detached villi are occasionally noted in the urine which when identified are positive but which are not always easy to recognize. By far the most positive and satisfactory method of diagnosis is by means of the modern electrically lighted cystoscope. This instrument discloses instantly their presence, their exact location, the extent of their growth and the presence or absence of malignancy.

Looking at one of these papillomata through a cystoscope a most interesting and unique picture presents itself. The threadlike villi move slowly to and fro in the fluid medium with each expulsion of urine from the ureters, resembling very closely the movements of aquatic plants.

*Prognosis:* Villous papillomata, in themselves, are purely benign and therefore if removed in that state do not recur. There is unfortunately a tendency after a lapse of a greater or lesser period of time for them to degenerate into a malignant condition. Just how frequently this happens is a matter for discussion. Pilcher, in writing on papilloma, states that, "It is at first benign in character, but almost invariably assumes, at some period of its existence, malignancy"; and "A single well developed villous papilloma suspended on a pedicle, showing no pathologic change in the mucous membrane of the bladder surrounding the base of the tumor and with no evidence of infiltration of the bladder wall, discovered in the bladder of a patient under forty years of age, may safely be diagnosed as a benign growth. All other tumors of the bladder, in the experience of the writer, are either malignant or have a tendency to recurrence after removal, with the later development of malignant characteristics."

*Treatment:* Two methods of removing these tumors are at our disposal: (1) excision and (2) destruction by fulguration.

*Excision:* This is accomplished through a suprapubic cystotomy wound, usually requires a general anesthetic and necessitates the patient being confined to bed. It may be added that papillomata removed in this way show a tendency to readily recur.

*By fulguration:* This is accomplished by the high frequency spark through and with the aid of a catheterizing cystoscope, a local anesthetic being employed. The method of procedure is as follows: The patient is placed in the lithotomy position and the urethra anesthetized. The bladder is then filled with a solution of boracic acid and the catheterizing cystoscope introduced. Through the channels used for the ureteral catheters the two terminals of a high frequency current are introduced into the bladder and in turn into the base of the tumor mass to be removed, the various steps being observed through the cystoscope. The terminals being introduced, the current is applied for a length of time varying from three seconds to three or four minutes, depending on the tolerance of the patient. The base is attacked in a systematic manner, one portion at a time being burned until the whole mass has disappeared.

Under this treatment papillomata of enormous proportions have been removed, the length of time required depending upon the size and position of the tumor, the depth of its attachment, the tolerance of the patient to the treatment. Very rarely, owing to the extensiveness of the growth, it becomes necessary to expose them through a suprapubic opening and destroy the whole mass by fulguration.

Papillomata destroyed by fulguration as a rule do not recur.

In conclusion I wish to emphasize (1) the importance of early diagnosis and treatment of papillomata to avoid a later malignant degeneration. (2) The superiority of the cystoscope as an instrument of precise diagnosis. (3) The greater majority of permanent cures following the fulguration method of treatment.

The following case will illustrate:

*Case:* Male forty-five years of age. No previous history of urinary disturbance. On January 1st, 1914, patient had sudden and complete retention of urine. Upon passing a soft catheter about sixteen ounces of what was apparently pure blood was obtained. Repeated washings of the bladder all returned bloody. Papilloma of the bladder was suspected and one week later when the urine became clear a cystoscope was introduced and revealed an enormous papilloma. The high frequency current was applied by Dr. Paul Pilcher twice a week for five or six treatments; there was no appreciable change. The next month, however, showed a marked improvement and on March 19, 1912, practically only a portion of the base remained. On May 28, 1912, two daughter cysts were removed.

At the present writing after a lapse of two years since the appearance of the first symptoms there is no sign of recurrence.

## ASSOCIATED PHYSICIANS OF LONG ISLAND.

### *Minutes of the Fifty-second Regular Meeting.*

The Fifty-second Regular Meeting of the Associated Physicians of Long Island was held at Eaton's Neck, near Northport, L. I., Saturday, June 19th, 1915. Eighty-five members and guests—among the latter a number of ladies—enjoyed a particularly good and bountiful "shore dinner" in the pavillion during which a local orchestra enlivened the proceedings with popular music. A yacht left the Battery Landing in Manhattan at ten in the morning and fifteen of those who attended came down that way. They gave such a glowing account of the pleasures of the sail that this party was heavily recruited when the boat left for home in the afternoon. A few went down on the morning train but a very large number, taking advantage of the good roads and the reasonable distance, drove to the meeting place in their automobiles. In the latter way many of the members from the Island towns made the trip.

The business meeting followed the dinner with the President, Doctor Guy H. Turrell in the chair. As the minutes of the previous meeting had been already printed, the reading was dispensed with by motion of the Society. The Membership Committee, through the Chairman, Doctor Robert Forrest Barber, made the following report:

*Proposed by Burton Harris:*

John D. Colson ...............173 Nostrand Ave., L. I. C. H., 1912
Irving G. Cameron .................274 Halsey St., L. I. C.H., 1904
John M. Scannell ......364 Jefferson Ave, Univ. & Bell., N. Y., 1904
William F. Walenta .............396 Graham Ave., L. I. C. H., 1911
Esmond B. Smith ..................827 President St., Cornell, 1909
William C. Cauble ........1614 East Eighteenth St., Louisville, 1901
Louis V. McGovern ............733 Quincy St., Univ. & Bell., 1902
Robert F. Ludwig ..................1242 Halsey St., Cornell, 1903
Walter E. Vogt ................191 St. Nicholas Ave., Cornell, 1903
Andrew H. Hangarter ..................168 Stagg St., P. & S., 1908
Howard A. Gilmartin ............81 Norman Ave., L. I. C. H., 1909
Neal McL. Whittaker ............585 79th St., P. &. S., N. Y., 1903
Ernest L. Schaefer ..........801a Willoughby Ave., L. I. C. H., 1912
Henry F. Graham ...............474 First St., P. & S., N. Y., 1905
Walter M. Lowell ....................432 Enfield St., Cornell, 1911
Alfred Edwin Baker, 672 Walnut St., Richmond Hill Queens Can., 1906

*Proposed by Frank Overton:*

Cornelius A. O'Leary .................Patchogue, L. I. C. H., 1908

*Proposed by Albert M. Judd:*

Hugh A. Rodden ...........249 Eighty-Sixth St., L. I. C. H., 1901
Augustus J. Molloy ......7808 Fourteenth Ave., P. &. S., N. Y., 1896
Charles Pollock .........1691 Eastern Parkway, P. & S., N. Y., 1906
Charles G. Koehler, Jr. ............859 Jefferson Ave., Cornell, 1906
John A. Shields ............573 Lafayette Ave., P. & S., N. Y., 1898
Anthony A. Rutz ...........105 St. Marks Ave., P. & S., N. Y., 1899
Harvey B. Matthews ........638 St. Marks Ave., P. & S., N. Y., 1909
Russell M. Rome ..............246 Clermont Ave., L. I. C. H., 1901
William Fankuchen ..................270 Hart St, L. I. C. H., 1902
Louis Fisher .............132 Pennsylvania Ave., L. I. C. H., 1911
P. Joseph York ................444 Fifty-fifth St., L. I. C. H., 1897
Edward Earl Wilson ......500 Washington Ave., P. & S., N. Y., 1900
Henry J. Dilberger .................432 Ninth St., L. I. C. H., 1911

*Proposed by James Cole Hancock:*

Rupert V. Gibbons ..................Oyster Bay, Syracuse, 1910
William H. J. O'Brien ......................Bay Shore, Yale, 1912
Joseph B. Conolly ......................Glen Cove, L. I. C. H., 1909
C. Floyd Haviland ...................Kings Park, Syracuse, 1896
F. Ignatius Drobinski .............697 Fourth Ave., L. I. C. H., 1906
George Adams Merrill .......931 Flatbush Ave., P. & S., N. Y., 1905
William W. Laing ............195 Greene Ave., P. & S., N. Y., 1894

*Resignations:*

J. Kent Worthington, Frank H. Richardson.

The Secretary was instructed by the Society to cast one ballot in favor of the election of the above and this was done.

The Committee appointed at the January Meeting to consider the recommendations made by the President, Doctor James P. Warbasse, at that meeting, and constituted as follows: James M. Winfield, Chairman; H. Beeckman Delatour and William Browning, reported as follows:

That they approved of "Recommendation One," which read, "The names of all candidates for election to membership recommended by the Membership Committee shall be published either in the Long Island Medical Journal, or sent to each member of the Society before the meeting at which such candidates can be acted upon. That they approved of "Recommendation Two," which reads, "One of the objects of the Associated Physicians of Long Island shall be the education of the public in matters pertaining to health, hygiene and medicine. With this object in view, the Committee on Public Health shall have added to it members whose function shall be giving public lectures upon these subjects. Long Island should be divided into districts, each district having in it a member of the Public Health Committee, whose duty shall be speaking before civic organizations, schools and other social bodies. The Committee on Public Health should not rest simply with having lectures prepared and at the service of the public when called upon, but it should be the duty of this committee to take the initiative, and arrange with such public bodies and social groups for lectures." That they consider "Recommendations Three and Four," "Good ideas but that they would not work well in the Associated Physicians of Long Island." "Recommendations Three and Four" read, "The President of the Associated Physicians of Long Island should be elected for a period of two years, for the reason that a period of one year in an organization having only three meetings a year does not provide opportunity enough for the development and execution of any definite policy. The position of President under the present laws is largely an honorary one—more for his honor than for the good of the Society. A president should be elected for the purpose of securing the best service from him in the interests of the Society, rather than bestowing this upon a member for the purpose of honoring him. The Recall, Initiative and Referendum with reference to all officers, by-laws and acts of the Society should be in the hands of the members.

It was moved, seconded and carried that the report of the Committee on the President's recommendations be accepted and filed and that the Society earnestly endeavor to carry out the intent of the recommendations approved.

There being no objection it was moved, seconded and carried that the motion made at the January, 1915, meeting by Doctor H. B. Delatour concerning the publication of the names of candidates prior to the meeting at which these names will be acted upon be considered as notice of a change in the By-Laws to this effect and that such notice having been given at a previous meeting such change be made. This action provided for a new section to Article VI to be known as Section 3 and to read: The name of every applicant for membership shall be sent to all the members at the time of sending notices of the meeting at which such application is to be acted upon.

There being no further business the meeting was adojurned.

James Cole Hancock,
Secretary.

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

JULY, 1915

## MEDICAL SOCIETY OF THE COUNTY OF KINGS

### Stated Meeting, June 15, 1915.

The President, Dr. Russel S. Fowler, in the chair. There were approximately 200 present. The meeting was called to order at 8:45 p. m., and the minutes of the previous meeting were read and approved.

### *Report of Council.*

The Council reported favorably upon the following applications for membership:

James Bernstein, 4503 13th Ave.; L. I. C. H., 1911; proposed by C. F. Pabst; seconded by Membership Committee, May '15.

Harry M. Greenwald, 303 Ditmas Ave., Univ. & Bell., 1910; proposed by J. P. Pendleton; seconded by Membership Committee, Mar. '15.

Walter W. Lowell, 432 Enfield St., Cornell, 1911; proposed by T. C. Takima; seconded by S. J. MacNamara, Apr. '15.

Aaron Roth, 1133 Eastern Parkway, Univ. & Bell., 1908; proposed by N. H. Rachlin; seconded by S. Shaftel, Mar. '15.

Charles E. Rynd, 533 Ocean Ave.; Johns Hopkins, 1911; proposed by L. J. J. Commiskey; seconded by F. A. Prendergast, Apr. '15.

Julius Schlein, 382 Union St., L. I. H. C., 1906; proposed by J. J. Sheehey; seconded by Membership Committee, Feb '15.

Jacob Schwartz, 604 Stone Ave., L. I. C. H., 1911; proposed by J. P. Pendleton; seconded by Membership Committee, Mar. '15.

Emory M. Wadsworth, 103 McDonough St.; Buffalo, 1898; proposed by S. H. Lutz; seconded by Membership Committee, May '15.

### *Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

James Elmer Baker, 1238 56th st.; Cornell, 1910; proposed by C. F. Pabst; seconded by Membership Committee, Mar. '15.
Samuel F. Brothers, 96 New Jersey Ave.; P. & S., N. Y., 1890; proposed by W. L. Chapman; seconded by Membership Committee, Apr. '15.
Anthony Cestare, 198 Sands St.; L. I. C. H., 1911; proposed by C. Goldman; seconded by C. F. Pabst, Mar. '15.
Edward R. Dorney, 309 11th St.; L. I. C. H., 1912; proposed by S. J. Post; seconded by Membership Committee, Mar. '15.
Geo. B. Fielding, 350 9th St.; L. I. C. H., 1899; proposed by O. E. F. Risch; seconded by Membership Committee, Mar. '15.
Simon Friedland, 510 1-2 Sixth Ave.; L. I. C. H., 1913; proposed by C. Galdman; seconded by Membership Committee, Mar. '15.
Charles H. Hall, 2933 W. 16th St.; P. & S., N. Y., 1902; proposed by S. J. MacNama; seconded by Membership Committee, Apr. '15.
Oscar J. Kahn, 78 Lawrence Ave.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington, Apr. '15.
Harrison F. Murray, 408 Grand Ave.; P. & S.; N. Y., 1912; proposed by C. F. Pabst: seconded by Membership Committee, Mar. '15.
Edmund H. Parizot, 467 Garfield Ave., Rchd Hill; L. I. C. H., 1914; proposed by C. F. Pabst; seconded by Membership Committee, Apr. '15.
William F. Tyler, 143 Kent St.; Syracuse, 1908; proposed by F. E. Hamlin; seconded by G. D. Hamlin, Apr. '15.
Geo. D. Von Deylen, 336 E. 32d St.; L. I. C. H., 1913; proposed by E. H. Mayne; seconded by R. Byington, Apr. '15.

### *Applications for Membership.*

Applications for membership were received from the following:

John J. Cahill, 427 51st St.; Albany, 1912; proposed by H. W. Benoit; seconded by Membership Committee, June '15.
James T. Gallagher, 440 Lafayette Ave.; P. & S., N. Y., 1892; proposed by S. J. MacNamara; seconded by Membership Committee, June '15.
William Herbert, 1240 Bushwick Ave., L. I. C. H., 1909; proposed by S. H. Lutz; seconded by Membership Committee, June '15.
Charles H. Tag, 284 Jefferson Ave.; L. I. C. H., 1898; proposed by S. J. MacNamara; seconded by Membership Committee, June '15.
Frank C. Vause, 381 Franklin Ave.; L. I. C. H., 1910; proposed by C. F. Pabst; seconded by Membership Committee, June '15.
Harry W. Vinicombe, 439 State St.; P. & S., Balt., 1912; proposed by C. F. Pabst; seconded by Membership Committee, June '15.
Harriet W. Hale, 306 Decatur St.; New York Medical College and Hospital for Women, 1896; proposed by F. W. Bradner; seconded by Membership Committee.
Binford Throne, 2 Macon St., Univ. Nashville, 1899; proposed by S. J. McNamara; seconded by Membership Committee.
W. E. Stern, 170 Barbey St.; Long Island College Hospital, 1909; proposed by S. J. McNamara; seconded by Membership Committee.

### *Scientific Session.*

Paper: "With the French Red Cross in Northern France."

By Daniel R. Robert, M.D.

Paper: "Surgery of the Duodenum." (Illustrated by lantern slides and specimens.)

By Edgar R. McGuire, M.D.,
Prof. of Surgery, Univ. of Buffalo.

Discussed by Thomas B. Spence, M.D.; J. Bion Bogart, M.D.

### *Miscellaneous Business.*

By order of the Council, the Secretary read the following resolution which was introduced by Dr. Bartley at a regular meeting of the Council, held on June the 9th, and adopted by unanimous vote.

Whereas: A study of the records shows that for many years the June meetings have been poorly attended, and

Whereas: Owing to the discomfort of attending meetings during the heated summer and the quite natural desire of many to spend as much time as possible in recreation at this season of the year, therefore, be it

*Resolved* That it is the sense of this Council that the June meetings should be discontinued and that the necessary amendment to the by-laws should be made.

Meeting adjourned at 10:50 p. m.

Burton Harris,
Secretary.

# EDITORIAL

## THE CAMPAIGN AGAINST CANCER IN NEW ENGLAND.

THE New England states generally show a higher death rate from cancer than any other group of states. This does not mean that New England people are more susceptible to this disease. Cancer is a disease of later adult life and it is well known that in part of New England there are more old people proportionately to the population than in many other regions. Nevertheless, the death rates recently published by the U. S. Census Bureau have stimulated much activity in these states in the educational campaign for the control of malignant disease.

What are the facts upon which this movement is based? According to the report of the Census Bureau, in 1913 there were 49,928 deaths from cancer in the registration area of the United States, corresponding to a death rate of 78.9 per 100,000 of the population. All the New England states have individual cancer death rates much higher than this. Connecticut's rate, which was the lowest of any of the New England states, was 85.1. Vermont's rate was the highest with 111.7, while the rates of the other states were correspondingly high, Maine having a rate of 107.5, New Hampshire 104.4, Massachusetts 101.4 and Rhode Island 93.3. When these figures are compared with those of Kentucky, with a rate of 48, they seem indeed very high. They mean that 6,817 people died in 1913 in New England from cancer. But it does not necessarily follow that cancer is more common in New England than elsewhere. The Census Bureau attributes the high cancer death rates in certain districts to the relatively high age distribution of the population and the negligible amount of immigration. Translated into everyday terms this means that in New England the proportion of people over forty years of age, or at the cancer age, to those under forty, and so less liable to cancer, is greater than in other places. Yet there is no doubt that the cancer death rate in New England as well as in other parts of the country is much higher than it ought to be. Without question a large percentage of cancer deaths can be prevented by early recognition of the symptoms and prompt recourse to competent surgical advice and treatment. Cancer is not a hopeless incurable affection, as so many people wrongly believe. Those who know the facts believe that if the public can be properly educated in regard to the early signs of the disease and will act on this knowledge, the present mortality should be reduced at least half and perhaps two-thirds.

That New England is awake to this opportunity of saving lives is evident from the activity in several states. To protest against taxation without representation the patriots of Massachusetts dumped overboard the famous cargo of tea. Vermont medical men have become so concerned over the high cancer rate of their state that they are going to hold a "tea-party" of another sort and attempt to dump overboard the high death rate from maligant disease. While their action is not so dramatic as that of the patriot raiders they hope to prove that through its great ultimate benefit to the community it will be almost as patriotic. The New Hampshire State Board of Health has recently published sound advice in its Bulletin. In Maine an active committee of the State Medical Society is arranging public lectures and causing the publication of instructive articles in the newspapers. Massachusetts has a well organized branch of the American Society for the Control of Cancer with headquarters in Boston. The Vermont Medical Society has arranged a series of public meetings to spread the bad news of the high cancer death rate and the good news of the hope of controlling the disease by early recognition and prompt surgical treatment. Morning, afternoon and evening meetings will be held on Tuesday, Wednesday, Thursday and Friday, June 8th to 11th, at Rutland, Burlington, Montpelier and St. Johnsbury. The Vermont State Board of Health will send its Secretary, Dr. Charles F. Dalton, to address each of these meetings and the American Society for the Control of Cancer will be represented by Dr. Francis Carter Wood, Director of Cancer Research at Columbia University, New York City, and by Dr. J. M. Wainwright, Chairman of the Cancer Committee of the Pennsylvania State Medical Society.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

## OTISVILLE.

THE Bulletin of the New York Department of Health of May 29th, in discussing the treatment of tuberculosis patients, has this to say in regard to the reception and free treatment of patients at the Otisville Sanitorium: "The justification for this practice is that isolation of patients ill with disease or with tuberculosis has value to the community as well as to the patient and that the patient who consents to the segregation is performing a community service, and should, therefore, be treated gratuitously." "But it having been discovered that a number of those under treatment are able and willing to pay something toward their care, it has been decided to establish three uniform rates to fit the varying financial condition of patients; $3.50, $7.00 and $10.50 a week. These rates do not apply to those who are absolutely unable to pay and the Department announces that there will be absolutely no difference in treatment or accommodations of patients; free or pay will be treated exactly alike."

The evident contradiction between the first sentence quoted and the decision to demand pay emphasizes a great need that is not met by any present provision, so far as we know, for the care of the independent tuberculous patient of small means. It is all very well for the Department of Health to insist that patients able to pay should be compelled to pay for their support, if only in part; it is equally evident that the principal object for which the Otisville Sanitorium was founded is lost sight of as soon as pay patients are accepted. So soon as a charitable institution permits its residents to pay, it lets down the bars to a variety of people who are not charity patients and as such should not receive city help under any circumstances. It is manifestly unfair that those who are capable of paying something should be classed as on an equality with the indigent. It is perfectly true that they need care just as much, but there should be means provided for the institutional treatment of just this class of patients who can pay something toward their care, but not enough to defray the total expense of the treatment. The applications from among the very needy for admission to Otisville are probably more than enough to keep the institution crowded and it should be reserved for those patients. State or municipal aid in the foundation and support of another class of sanitaria for the partially dependent is a step toward the proper care of a large class of worthy patients who are at present unprovided for except as they may be able to be cared for at Ray Brook, Otisville, Trudeau, Loomis or Stony Wold, or in the more expensive private sanitaria upon borrowed money.

There is a pressing need for the establishment of farm colonies, industrial communities and similar centers where the light labor of convalescents will help to offset the cost of their maintenance and where they may, if they choose, settle permanently and find a market for such products as their strength, skill and training permits. The requisite capital for the inception of such a scheme need not be large, as tracts suitable for mere residential and manufacturing purposes are many and should be cheap. Farming lands for agricultural settlements need not be sought until after the value of the industrial settlements has been demonstrated. A step of this kind directly or partly under state aid would help also in relieving the sanitaria of many patients who are well enough to conduct their own treatment, but who have not convalesced far enough to be regarded as arrested cases. The rule adopted at Otisville to limit treatment to a period of nine months, which is in line with the rule at Trudeau, shows how limited the resources of the institution are at present. It is greatly to be hoped that some such plan may be speedily inaugurated; the need for it is very great. H. G. W.

## THE CANCER CAMPAIGN.

THE efforts of the Committee on Cancer of the Pennsylvania State Medical Society have resulted in the general simultaneous publication of a large variety of articles upon cancer in practically all the American Medical Journals. The effort to bring the imminent importance of this subject before the general profession cannot be overestimated. The charge has been laid at the door of many a physician that his failure to grasp the significance of cancer in its earliest days was the real reason for his patient's death. Bloodgood, Ewing and others have dwelt on the necessity for eradication of suspicious conditions in the so-called precancerous stage and yet it remains a fact that thousands of sufferers go on to the irremediable stages partly through a *laissez faire* policy on the physician's part, or ignorance on that of the patient. So many women harbor cancer of the breast and strive to hide its presence even from themselves, who could have been saved by partial excision of a precancerous mastitis, or are found with advanced pelvic infiltration after a history of months or even years of irregular menstrual conditions that should have excited the suspicion of a cancerous origin. The education of womankind to the need for watchfulness seems imperative, but it must be accomplished in such a way as to excite an intelligent interest without bringing about a hysterical fear such as is so often found in those who suffer from the keenness of their imagination. The phobias are almost as bad as the realities. H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

*Regular Meeting, Dec. 4th, 1914.*

The President, Dr. O. Paul Humpstone, in the Chair.

### Placenta Succenturiata.

Dr. Pfeiffer: Anomalies of the placenta are more common than ordinarily supposed and we miss them by hasty or incomplete examination. One of the most interesting of the anomalies is placenta succenturiata, of which this is a specimen. This does not show as well as it did two months ago when the intervening membrane was more easily seen. It will be noticed that there is a distinct membrane between the placenta and the accessory lobe, much better shown than in any case I have yet seen. Aside from its interest as a specimen, its chief significance lies in the possibility of the accessory lobe being retained with a portion of the membranes and a cursory inspection would overlook that fact unless the membranes were reconstructed and the missing portion noticed. Suitable means for the expulsion of the secundines then begun would occasion no surprise if a piece of placenta accompanied the membrane.

### Postoperative Adhesions Following a Coffey Operation.

Dr. Judd: The first case I wish to report I operated on this morning at the Kings County Hospital. The patient was operated on at St. Luke's Hospital six months ago for retroversion. I called up the hospital this morning but was unable to get any information, and not having time to write we proceeded with a vaginal examination. The findings were as follows: Retroversion of the uterus which seemed to be restricted in motion, impossible to produce a normal anteversion, showing that there must be some adhesion posterior to the fundus. In operating I made a transverse skin and longitudinal deep incision. I found that there had been a Coffey plication of the round and broad ligaments. There were adhesions of the omentum to the fundus and to the round and broad ligaments. The adhesions I relieved and finished the procedure by the Alexander operation.

### Postoperative Venous Bleeding.

Dr. Judd: The second case I operated on last Tuesday, doing a vaginal plastic operation and then going into the abdomen intending to take out the left tube and ovary. I found there was such a condition of both tubes and ovaries that I came to the conclusion that I might save one ovary and do a supravaginal hysterectomy. The woman was stout, she had a deep pelvis and there was extensive chronic inflammatory disease, and the operation was finished with difficulty. Before closing the abdomen I followed Dr. Baldwin's suggestion and injected saline into the sigmoid. I wanted to improve on Dr. Baldwin's idea and as the sigmoid did not come up I put in more saline and it did come up after using three pints. There was no hemorrhage at the time but during the middle of the afternoon the pulse began to go up and at one o'clock the next morning the blood pressure was 90 and the pulse 140. I opened the abdomen and found a very moderate amount of blood free in the abdominal cavity; no arterial bleeding anywhere; simply venous oozing along the suture line which was easily stopped by means of mattress sutures. I believe that the large amount of saline used pulled on the sutures and so loosened them that it caused the venous oozing, but there was no arterial ligature loosened. It taught me a lesson.

### Postoperative Recto-vaginal Fistula.

Dr. Judd: The third case was a hysterectomy which I did for chronic inflammatory disease last Tuesday. It was a pan-hysterectomy and the conditions were very nasty. I had to use the cautery around the vagina and also used a rectal tube and left it in. On the third day the patient expressed the tube and on the fourth day developed a recto-vaginal fistula, whether due to the cautery or rectal tube I cannot say.

Dr. Wade: I was interested in Dr. Judd's statement regarding the use of the transverse skin and longitudinal deep incisions. I have been using that method for six years and consider it the best. With this method there is not the danger of going into the rings as in the other operation.

### Adenocarcinoma of the Rectum; Radium.

Dr. W. B. Chase: Miss P., a patient of Dr. McCorkle. The woman had suffered for a long time with rectal hemorrhages. She had always refused examination and the condition was presumed to be hemorrhoids but never ascertained. Living in a New England city she came in September to Brooklyn for treatment. She showed marked debility from loss of blood, was anemic, and complained of a, so-called, inflammation of the neck of the bladder, and the treatment in her home city had been for inflammation of the bladder, but it proved to be a reflex. On examination Dr. McCorkle found, about three inches from the anus, a polypoid growth attached to the posterior wall of the rectum. The patient entered the Long Island College Hospital and was operated upon by Dr. J. D. Rushmore. On examination of the specimen, Dr. Murray decided that it was an adenocarcinoma. The patient came under my care about the first of October and was treated by me with radium. There was no pain at the point of the removal of the growth but the infiltration extended for one-half the circumference of the gut. I used radium six times, 50 to 100 milligrams. I was able to reach both sides of the infiltrated tissue through the vagina and rectum, getting crossfire which added to the efficacy of the dose. At the end of six weeks Dr. Rushmore was unable to find any evidence of diseased tissue and my own examinations agree with him. The patient returned home apparently well. There were other features about this case that were interesting: the distressing bladder irritability was purely reflex from the growth of the rectum; the analgesic effect of the radium on the uterus and bladder; the progressive diminution of the irritability, which was relieved for four days. Another phenomenon was that the patient was exceedingly sleepy for two days after each treatment. The use of radium after the removal of a malignant growth is of great importance, to reach any remaining malignant tissue that in many cases one cannot identify.

### Inoperable Carcinoma of the Cervix; Radium.

Dr. Chase: Mrs. K, resident of New Jersey, a patient of Dr. Polak. She came under my care for an extensive inoperable cancer of the cervix involving contiguous structures. She was cachectic and loosing strength. She was treated by forced feeding and improved somewhat in her physical condition. I have been treating her with radium in the vagina and rectum so as to get an effective crossfire twice a week. She has practically no pain though there is no diminution in the growth or discharge. She does not bleed as she did but otherwise there is no marked change. The treatment is only palliative.

### Adherent Placenta.

Dr. Beach: I wish briefly to report a case which has many unusual features. I was called in consultation two years ago to deliver a primipara who had been in labor five or six days. When I entered the apartment some distance from the room occupied by the patient I was met by a strong, offensive odor. I made an examination and found in the vagina what appeared to be intestines and further examination proved it to be such, due no doubt to the long continued pressure upon the child in a breech position. I did a breech extraction, perforating the after coming head, and though the patient had a sapremic infection she finally made a good recovery. Two years after this I was called by the same doctor to see this patient at the Jewish Hospital. She had been in labor about twenty-four hours and the membranes had been ruptured twelve hours. The presentation was again a breech, the baby was alive, but there was a grumous discharge with some odor. There was no pelvic contraction though possibly some flattening. It seemed with full dilatation that I should be able to deliver by the breech which I did, though the child was dead. We waited the usual time for the placenta to come away but it did not. At the end of twenty minutes we tried the Crede without result. There was no bleeding and I made several attempts to empty the uterus by the Crede. At the end of an hour I entered the uterus and found a completely adherent placenta. There was no place around the placenta where any impression could be made with the fingers. There was one place where one or two fingers could be gotten in but as soon as I made any effort at traction I found strong fibrous bands between the placenta and the uterine wall. I then packed the uterus. At the end of thirty-six hours she had a chill and the temperature rose to 104. I gave her an anesthetic and upon examination found the placenta about one-third separated, and after about fifteen minutes work I was able to find a line of cleavage and delivered it. This patient went on to a virulent sepsis; there were streptococci in the blood and only ten thousand leucocytes; there was no resistance at all on the part of the organism. We tried an autogenous vaccine but in spite of all we could do there was an increasing anemia. She was then transfused, the blood being taken from her husband. After this she improved for three or four days; her general appearance was better, there was less of the drowsy septic look, and her hemoglobin went up fifteen per cent. At the end of a week we again made a transfusion from the husband, taking six hundred cc. at each sitting. There was some improvement and the leucocyte count went up to thirteen thousand. At the end of the third week we repeated the procedure. To increase the value of the blood of the donor we had given him streptococcus vaccine, possibly three or four hundred million being used at the end of the dosage. The woman at this time was almost moribund and we made the attempt hoping to get some result, but she died at the end of four days after the last transfusion. This case has numerous points of interest. The etiology of the adherent placenta I take to be the sapremic infection of the previous labor. The question arises, what should we do for adherent placenta? If this patient had not been infected by the treatment she might have become septic anyway. Personally, I believe that if I came across another case of adherent placenta I would do a hysterectomy. I have seen only two cases of this type; in the other I dug the placenta out piecemeal and the woman died, apparently from shock. The marked improvement for a few days after transfusion seemed to show that it has a definite field in sepsis. To those who are not familiar with the Linderman method I would recommend it. We had no difficulty in giving six hundred cc. in twelve minutes and the donor went back to work immediately. The last point is whether the vaccination did any good. I have doubts as to its real value. I am free to admit that we did the vaccinating of the donor too late as the woman was then almost in a moribund state.

Dr. Pomeroy: It is very disturbing to be called upon to discuss adherent placenta. I have only a theoretical knowledge of the subject, never having seen a case. I may not have seen enough obstetric cases to meet with one of this kind. There must be such things because of the testimony of those who have had them, but I believe that there are not so many truly adherent as are gone after under that diagnosis. Every interne in the course of his experience has at least one case of retained placenta and he usually goes after it thinking it may be adherent. This is not intended merely to be flippant, it is intended to raise the serious question as to the probable occurrence of such a condition, and whether a patient can have an endometritis which has a relation to adherent placenta later. I believe that a definite endometritis definitely inhibits the initiation or persistance of pregnancy. I do wish to put in one statement aside from these rather wandering remarks: I think the proposition to pack the uterus with any foreign body whereby the patient is subjected to any septic risks is unsafe. I think Dr. Beach's observation that he would do a hysterectomy in preference is absolutely sound.

Dr. Pool: I have had only one experience with genuine adherent placenta. It occurred many years ago, but I still remember it as a most unpleasant complication. After a considerable delay, and the employment of the usual means of bringing about its delivery, I carried my hand into the uterus, and found the placenta to be practically a unit with the uterine wall. No line of cleavage could be found, and the placenta was torn away piece by piece. Of course the patient became septic, and passed through a very stormy convalescence. The infection resulted in an extensive pelvic cellulitis, and the formation of an abscess which was later drained through the vagina, and eventually recovery was complete. I was more fortunate, though, I believe, less skillful than Dr. Beach, in my treatment. His method of packing and waiting for several hours seems to me distinctly better, as it is often remarked what a change may be effected by a period of uterine contractions. This has long been my practice in cases of difficult placental delivery. The advantage of the uterine pack may possibly be called into question, but it is believed that it helps to stimulate contractions, and when carefully introduced, should not add to the danger of infection.

The obvious difficulty of making an immediate differential diagnosis between the conditions of "retained" placenta and true adherent placenta, limits the usefulness of hysterectomy as a means of treatment. To be of value, hysterectomy must be done early, and it is likely to happen that by the time its indication is clearly established it is too late to operate safely. Thus, in Dr. Beach's case, I question whether hysterectomy would have saved the patient. He reports that there was a sharp rise of temperature before he attempted a manual extraction of the placenta, and it would appear that infection had already taken place, which would have made the major operation unsafe. It seems to me that his management of this most awkward complication is to be fully endorsed.

Dr. Baldwin: I had one case a good many years ago. The patient was allowed to go twenty-four hours with her placenta in the uterus and at the end of that time I removed it by scraping it off. She died. It is the only case of obstetrics I ever lost.

Dr. Humpstone: I have seen one case of adherent placenta, at the Methodist Hospital which went through a course similar to that described by Dr. Beach. She had a virulent sepsis but finally recovered after months of invalidism.

Dr. Beach: I agree with Dr. Pomeroy that the majority of cases of this character are nothing more than simply retained placenta. I have seen the placenta retained in hour glass contractions, which were difficult to remove, but I do not think a careful study of the case would lead one to confuse the two conditions.

## "Experiments on the Etiology of Eclampsia."

*Edward T. Hull, M.D., New York.*

Dr. E. T. Hull, of Manhattan, read this paper, the work being done in the Crocker Laboratory and in the Pathological Laboratory of Lincoln Hospital. He stated that the pathological changes of eclampsia center for the most part about the liver and kidney. The liver changes vary from cloudy swelling and scattered hemorrhages to focal necrosis and thrombosis and in advanced cases to more or less complete autolysis of the organ. The kidney changes are those of acute degeneration and include swelling and necrosis of the cells of the glomeruli and tubules.

During pregnancy fetal protein elements enter the maternal circulation where they undergo digestion. Other protein poisons are known to produce symptoms resembling those of eclampsia, snake venom, etc. His hypothesis was that eclampsia is due to an excess in the maternal circulation of the products of the digestion of fetal protein. He assumed that the autolysis of tissue would produce substances resembling those resulting from ferment action in the blood. Autolysates of (1) rabbit placenta; (2) rabbit fetus; (3) rabbit fetus with placenta and membranes; (4) rabbit liver and kidney, were used. These autolysates were injected intravenously or subcutaneously in varying doses over varying periods of time. Some of the animals died and the others were killed. All were autopsied and microscopical examinations were made of the liver and kidney and other organs which showed changes.

In the next series an attempt was made to overload the organism with fetal protein in which the intracellular ferments had been killed by boiling. Some of the animals were killed at definite intervals and the blood serum tested for protective ferments. The surviving animals were found to develop convulsions and died in coma at varying periods.

In a series of sixty normal pregnancies the Abderhalden test was positive. In eight eclamptics it was negative, in three positive. In five cases of toxemia of pregnancy it was negative at first examination but became positive as the condition improved with treatment. In two toxemia cases where the condition improved under treatment the reaction remained negative, one developed eclampsia at the seventh month. In the animal experiments the protective ferment reaction gave rather confusing results.

The microscopical examinations were interesting. When the autolysates were injected the most marked changes occurred in the liver, less in the kidney. In the series where boiled cells were injected the changes were most marked in the kidney, less in the liver.

In the final experiments an attempt was made to determine which product or products of autolysis were responsible for the lesions induced. Several simple and dibasic amido acids which were the product of autolysis were injected separately into animals. The animals injected with leucin died within from three to seventy-two hours after injection; the others, killed ten days after injection, showed no changes.

His conclusions are: "1. Ferment active homologous protein when introduced parentally induces extensive degeneration of the liver, and, as a rule, but slight degeneration in the kidney. These lesions probably are equivalent in the rabbit to those seen in the organs of the eclampsia human female.

"2. Homologous protein, boiled to destroy the enzymes and then parentally introduced, produces, as a rule, but slight lesions in the liver; it damages the kidney, however, to a very marked degree as evidenced by enormous quantities of albumen with all kinds of casts in the urine. The animals die in convulsions and coma, reproducing the symptoms of eclampsia in the human subject.

"3. Leucin, one of the products of autolysis, produces on injection a marked degeneration of the liver both in rats and rabbits. In the rat degeneration of the kidney also is induced, though this does not occur in the rabbit. The boiled cells are killed before leucin can be formed, hence hepatic degeneration after their injection is a minimum."

From the facts stated above he believes that eclampsia develops in the following sequence. An overload of fetal elements is thrown into the circulation and, whether in the circulation or not, is autolyzed with the formation of an excess of leucin. The excess of leucin injures the hepatic vessels with consequent thrombosis, cloudy swelling, focal necrosis, and more or less complete autolysis of the liver cells. The renal changes are probably due in part to other products of autolysis, and, perhaps also to protein fractions incompletely broken down by the liver. The surprising feature of the process is the extent to which the liver may be damaged experimentally before clinical symptoms appear in the animals. Judging from analogy, such may well be the case in the human subject. The hemorrhages and the convulsions are due in all probability not to extensive hepatic changes but to the renal lesions as shown by his experiments with boiled cells. It appears from his experiments that albuminuria is an important sign since severe renal degeneration seems to be the important lesion. The experiments further suggest that a negative protective ferment in a known pregnant female and a determination of the leucin content of the blood will prove to be diagnostic procedures of value.

**Dr. Humpstone:** Some years ago while I was in Baltimore I sat in the office of Dr. Williams and discussed with him some of the newer obstetric methods, and the problems still unsolved. He was particularly interested in the lack of knowledge we have on this subject of eclampsia. When I learned of Dr. Hull's work and had the pleasure of listening to his paper I felt it was of sufficient importance to be presented here, if he could be obtained. While I believe it is intensely practical still it must be thought over carefully to fully grasp all he says. I feel that we have in his work a step in advance in the study of the causes and diagnosis as well as the treatment of eclampsia. If any of the members desire to discuss it the way is now open.

**Dr. McNamara** asked if there was anything in the method described by Dr. Hull that would be of service to practicing physicians to aid in the diagnosis or treatment of eclampsia and if Dr. Hull believed the intestinal conditions primarily the chief and important point in the development of eclampsia, or only one of the points.

**Dr. Hyde** asked if the tests mentioned in the paper could be done in the ordinary laboratory.

Dr. Cary: Recently I spent a short time with Dr. Crile while I was in Cleveland. He showed me several pictures of degeneration of the kidneys and liver which seem similar to the lesions shown in the photographs exhibited this evening by Dr. Hull. Those shown by Dr. Crile were due to severe and prolonged fright of animals. Working along his theory of the degeneration of tissue due to fright which affects patients approaching operation and which he prevents or thinks he does by the use of morphia and careful anesthesia, I wonder if the success in treatment which seems to attend the use of morphia in eclampsia is really scientific, if it does exert any effect over the pathological changes which go on in the liver and kidneys, and if morphine is to be our sheet anchor in the treatment, so far as medication is concerned.

Dr. Hull: With regard to degeneration following fright and nervous shock the only thing that I can say is that in such a condition we have to deal with a process of metabolism. If there is a rapid disintegration and separation of cells, and a breaking down of their proteids and they are thrown into the circulation I can see no reason why this should not be so. I do not see why fright should be a sufficient cause of degeneration, but to my mind it is the rapid breaking down and the entrance into the circulation of the products of metabolism. Morphine by lessening the convulsions might lessen the metabolic changes. Morphine might be good to control the effects where there have been degenerations.

As to what there is practical in this study. Certainly we have got to know the cause before we can develop a cure. There are two facts that I have mentioned as being practical. One is the negative Abderhalden test in a pregnant woman. In the presence of a negative there would be the indication of a toxemia.

The test for leucin at present is complicated, the quantitative is not possible in the ordinary laboratory; it is very technical and not adapted for general application at present. If it could be elaborated it would be of great importance. The negative Abderhalden could be carried out. When you consider the many changes in metabolism we are dealing with you you will realize that these are complicated subjects. As an explanation of the cause of eclampsia it is very simple and takes in things we know. The protein is toxic when entering the blood as such and it seems very logical to look to that as a cause of eclampsia and it seems to me conclusive as fitting in with certain facts we already know. Take the negative Abderhalden. We know there is the presence of protein in the blood, and if in eclampsia there is an excess of protein the test should be negative, and as we see, in ten eclampsias eight were negative, two were positive. In the toxemias of pregnancy all were negative. In getting rid of the products of metabolism they become positive. Another way it which it first in with knowledge we already have: if the proteids are incompletely broken down we expect to find increase of intermediate tests, increase of ammonia, increase of uric acid. On the other hand increase of urea is found. It is present in eclampsia. We have low urea and high intermediary products. Those coincide with the facts already known. Veit sometime ago elaborated a theory as to the cause of eclampsia, believing it to be due to the presence in the blood of substances which are broken down from the placenta. That is along the same line we have been working on. In his proof he tried to find the normal element from which to make an antitoxin with the substance. We do not look for that but take the products of simple digestion as the cause.

The condition of the intestines is one but not the sole source of the trouble. Of course protein can be broken up by bacterial cells and ferments if there is stasis in the intestines and the formation of toxic products results. They will also be absorbed and add to the toxin. We consider that normally there is a certain element of toxemia which the patient carries, not toxemia evidenced by lesions, but as the result of the breaking down of fetal protein. If we have an overload; if for any reason a shower is carried into the circulation, then the symptoms develop. It is more easy to cause in pregnancy because they have also a part of the load at the time, by absorption of the protein from the intestines. Whether the cause of the toxemia is from enzyme or bacterial origin we do not know.

# TRANSACTIONS OF THE LARYNGOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY

*March 18th, 1915.*

PROGRAM.

1. Stenosis of Larynx, Report of Case. Exhibition of Patient. By Luther T. Jackman, M.D.
2. Laryngeal Diphtheria following Tonsil Enucleation. Report of Case. By Stephen H. Lutz, M.D.
3. Dermoid Cyst of the Nose. Exhibition of Specimen. An Unusual Anomaly of the Sinuses. Illustrated by X-Ray Plates. By Claude G. Crane, M.D.
4. Consideration of Suspension Laryngoscopy. (With probable demonstration of method.) By Wolff Freudenthal, M.D.
5. The Tonsil and Evolution. By Robert G. Eccles, M.D.

## Stenosis of the Larynx. Report of Case. Exhibition of Patient.

*Luther T. Jackman, M.D.*

The case I bring before you tonight is one which has presented a most interesting study, not only to myself, but to many others who have seen it.

It would seem that laryngeal stenosis has been given very little attention in the American text books. Some German writers have gone into the subject more deeply. I hope that Dr. Harris, of Manhattan, who is with us this evening, and who has made quite an exhaustive study of the subject, will be given an opportunity during the evening to give us some of his conclusions.

Patient, P. R., painter by occupation, age 32, residing at 1836 Seventy-third street; birthplace, Italy.

Family History: Negative. Both parents and one brother and sister living and in good health.

Past History: Negative, with the exception of attempted suicide at 17 years of age, the bullet entering under the chin and passing up through the floor and roof of the mouth and lodging in the left nasal cavity, causing no difficulty and no trace, except a fibrous tract, which can be easily followed.

Present History: The patient came under my service at the Samaritan Hospital Dispensary in April, 1910, complaining of hoarseness and partial aphonia. Examination at the time revealed only diffuse hyperemia of the larynx with slight edema. He was treated with inhalations of tincture benzoin compound and iodides internally and obtained relief temporarily. Notwithstanding my instructions to the contrary, he ceased coming after two or three visits. In August he turned up again in the clinic and was likewise treated and relieved. On October 13th he entered the hospital, complaining of aphonia and marked dyspnea. Temperature 101; pulse 90; respirations 32. The following day the temperature was normal; pulse 86; respirations 26. During this time the patient coughed a great deal and frequently vomited large quantities of mucus. The second night after entering the hospital he was very restless, the legs twitching whenever he slept; profuse perspiration and at times delirious. At 3:00 a. m. I received a message that the patient seemed unable to breathe and was dying. Upon arrival at the hospital, some fifteen or twenty minutes later, I found the patient unconscious, cyanosed and gasping for air. He was removed immediately to the operating room and a rapid tracheotomy was performed, Dr. Durkee assisting. The patient had stopped breathing before we were able to insert the tube and so the incision was kept open by means of the tracheotomy dilating forceps while Dr. Durkee began artificial respiration. When this seemed likely to prove of no avail, the sphincter was rapidly dilated and with a long drawn inspiration, respiration was quickly established and in a few minutes the patient became conscious.

For several days following a large amount of mucus was discharged through the tube, but the patient, on the whole, was more comfortable. He ran a septic temperature for three weeks following, which varied from 99 to 101 degrees, on two occasions going as high as 102 degrees. This was finally relieved by the discovery and drainage of a considerable abscess behind the trachea, above the tracheotomy opening.

The patient remained in the hospital about ten weeks, during which time the sputum was examined and the Von Pirquet and Wassermann tests were made, but all were negative. Nevertheless, mercury salicylate was given hypodermically into the gluteal muscles and potassium iodide up to 100 minus t.i.d., without any appreciable effect.

Since leaving the hospital the tracheotomy tube has been worn constantly and there has been no serious trouble.

During this period several examinations of the larynx have been made, both by the direct and indirect method. He has been observed by many nose and throat men at the Samaritan, Jewish and Post-Graduate Hospitals. A very slowly increasing, diffuse mass occupying the larynx in the supraglottic space has been noticed and found, upon removal of portions by the laryngeal forceps, to be dense and firm and a diagnosis of endochondroma was made. Dr. Commiskey, of the Samaritan Hospital, and Dr. Blatteis, of the Jewish Hospial, made pathological examinations and reported as follows:

"Tissue shows small areas of round cell infiltration and portions, resembling papilloma, surrounded by areas of dense fibrous tissue. Occasional mucous glands demonstrated. Nothing resembling sarcoma or cancer. No appearance suggesting either tuberculosis or syphilis."

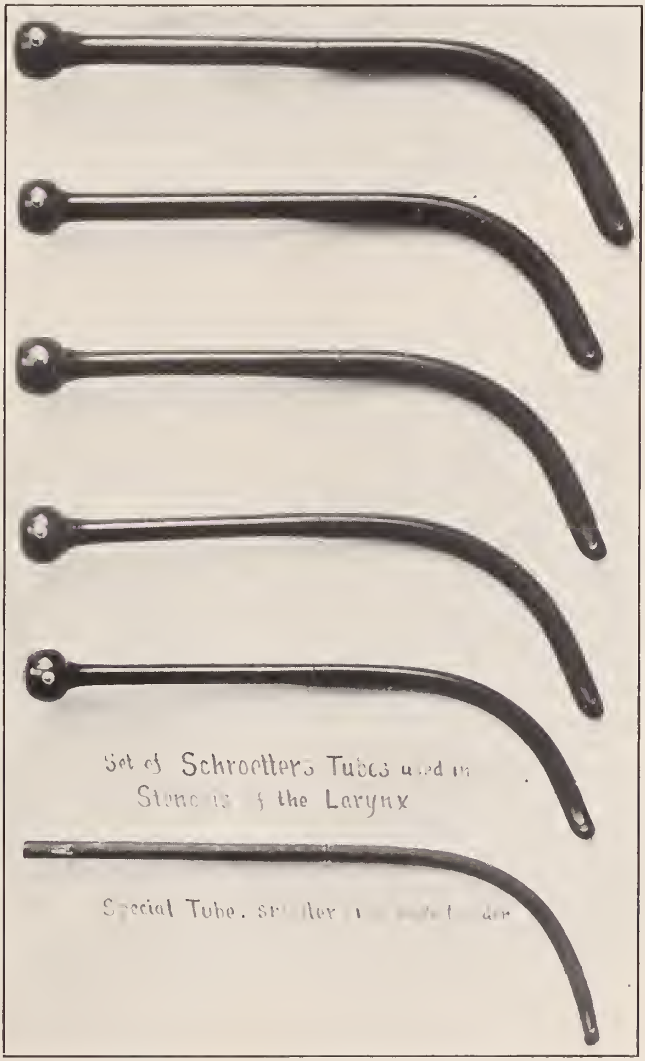
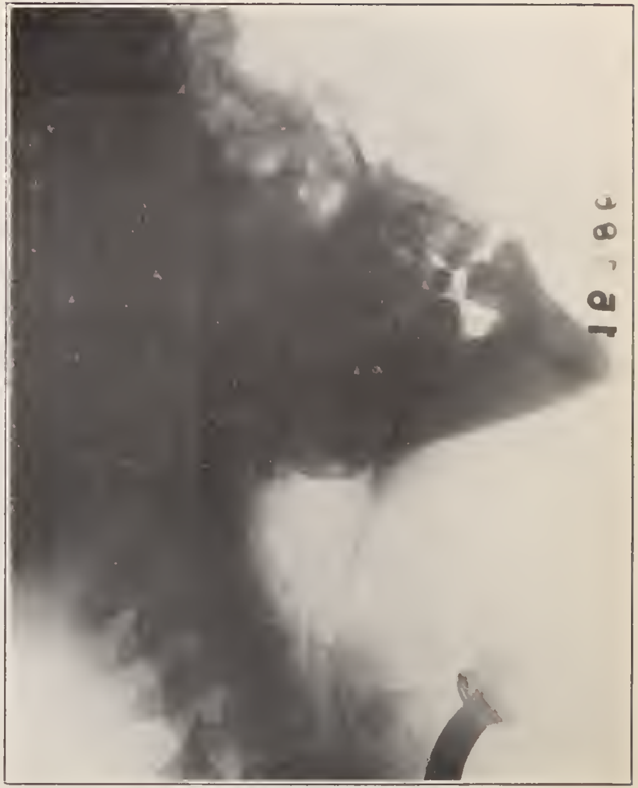
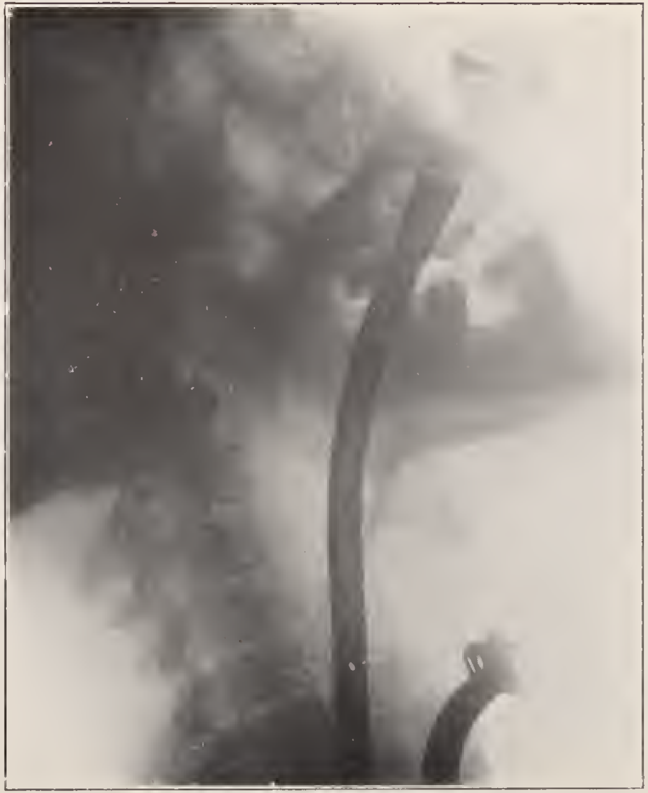

Set of Schroetters Tubes used in
Stenosis of the Larynx
Special Tube. smaller [illegible]

PLATE I.



Showing Schroetter's tube, supposed to lie in the trachea.

PLATE II.



Showing Schroetter's tube with catheter full of Bismuth Paste in oesophagus.

Something over a year ago I brought the patient to my service in the clinic of Dr. Thomas J. Harris at the Post-Graduate Hospital. Dr. Harris had expressed his interest in stenosis of the larynx and had suggested the use of Schroetter's tubes as an effective method of treatment. An examination by bronchoscope with the Killian suspension apparatus was made under the supervision of Dr. Forbes. The epiglottis presents a ragged, punched-out appearance, including the tip and portion of the left side, possibly the result of an old ulceration. The right arrytenoid is considerably larger than the left and approximates it very closely, leaving a very narrow commissure. The use of the tubes was begun and it was thought that success was crowning our efforts with the smallest sized tube. To all appearances it entered the trachea, as air in sufficient force to blow out a match was blown through the tube, but the distal end did not come in contact with the tracheotomy tube and it was decided to have a radiograph taken with the tube in situ. The result was as you see in the one marked No. 1.

I have two photographs here. The first one was taken with a Schroetter's tube in place, supposed to be in the trachea. That did not show up very well and didn't give us much enlightenment on the subject. We thought possibly he had a diverticulum and another picture was taken with a Schroetter's tube in position as introduced by the patient (he had gotten into the habit of introducing it himself and seemed to feel that he was getting it in the right place) and a large catheter filled with Beck's paste. The second one shows the two tubes supposed to be in the trachea. We finally decided that although we thought it was in the trachea he was putting it down the esophagus and was swallowing air and blowing air out through the tube. We found that we couldn't use the smaller tube. Those that you see here are the only ones made and I had Tiemann make another tube, a size smaller, the metal one that you will see passed around. I haven't been able to use that either and I have ordered another one which will be smaller yet and which will compare favorably with the esophageal forceps exhibited which I can introduce in the glottis.

During this time the case was shown to Dr. Jonathan Wright and a piece of tissue was removed and examined by him and pronounced "chronic inflammatory tissue."

We came to the following conclusions:

The patient had an intralaryngeal abscess of slow formation, which ruptured externally down through the tissues into the tracheotomy opening. This finally healed, leaving behind a dense mass of fibrous tissue causing the present obstruction.

The patient is here. If any one would like to examine the throat he can do so. I think that he is sufficiently anesthetized by this time.

Dr. Thomas J. Harris, of Manhattan, in opening the discussion, said: "I thank you for the privilege of saying just a word about this case. First, I want to congratulate Dr. Jackman on the very clear and concise history he has given of an unusually interesting case. It is a case unlike anything I have ever seen. Clinically, after the process of elimination which we have been able to make by the various examinations that have been made, the clinical picture is distinctly that which Dr. Wright has reported pathologically, one of chronic inflammatory tissue. It is not unlike what one finds after a tube case following diphtheria, a chronic hyperplasia.

"The very interesting condition that the doctor has spoken about and the way we fell into error about passing Schroetter's tubes is correctly stated. We thought that we were making good progress with the smaller tube; then there was a question as to whether we were in there at all, and we found that we were in the esophagus. The view was surprisingly good under suspension.

"Mr. Chairman, your program is so very long that I want to say but a single word upon the treatment of cases like this.

"The whole treatment of laryngeal stenosis, chronic stenosis, was developed by Professor von Schroetter a good many years ago. He has been rather lost sight of in his work in the work of other men in recent years. The great exponent of this work today is Thost of Hamburg. He has a long series of cases, especially in children, which he has treated with his laryngeal tubes, which he is in the habit of introducing through the tracheotomy opening and allowing them to stay there permanently.

"In this country we owe more to O'Dwyer than anyone else. He did most of his work in acute cases however, and it remained for a man who belongs to our own generation to perfect O'Dwyer's work, namely John Rogers. You all know of Rogers' work. It has been truly brilliant. His work is quite different from what Schroetter has done. You are seeing here one of the two methods which Schroetter was in the habit of using, namely the hard rubber tube. He studied out pretty thoroughly the construction of the tube and decided on the hard rubber one.

"If you start with the pathological findings which we now thoroughly understand, namely hyperplasia of the larynx, the result of prolonged intubation, the principle is a very simple one. It begins with a persistent and continued pressure on the mass. In the hands of von Schroetter the most brilliant results were obtained."

At this point in the discussion, Dr. Harris referred to the work on "Peter" and continuing, said:

"After a time (sometimes the treatment was persisted in for a period of one or two years) complete recovery would be found in these cases that previous to this time had been wearing tracheotomy tubes. Later on came the intubation tube and treatment with that. Rogers' treatment has been with a modification of the tube of O'Dwyer. In these cases there has been great difficulty in ever allowing it to stay out, the constant liability of having it coughed out when you didn't wish it, with the great danger to look from edema following, or in some cases (which is undoubtedly true) of paralysis.

"Rogers struck upon the very happy thought that in such cases as those he would get the tube to exert gradual pressure and so he enlarged the neck of the tube to correspond to the point in the larynx, where the amount of hypertrophy is greatest and where probably ulceration has existed, leaving the tube in for a period of from four to six weeks and then taking it out only when it is foul. In this way he has been able in favorable cases in the course of six months to get an opening of the larynx sufficient to allow the tube to remain out. Not all of the cases, however, will permit of a tube staying in. Here the T or "plugged" tube is indicated.

"I don't think that Rogers is the first to use the tracheotomy tube, but he has made repeated use of it and it has served me admirably in one or more cases which I have had under my care. It is a long intubation tube properly fitted to the larynx with an opening opposite the tracheotomy wound on which a "post" is clamped which holds the tube in position in the tracheotomy wound. The child is thus allowed to go home, to go about and to go to school and there is no danger of his coughing the tube out.

"I would like to say just one more word about a possibility that is illustrated in a case which I have had under my care only recently and which is very similar to many other cases of a like nature. It is this: We are confronted with a case of laryngeal stenosis, papilloma or otherwise, where we have removed the growth. There has been a tracheotomy. The canula is left in after the larynx is cleaned out, and when we try to take it out, there is an obstruction in the wound. The reason for that is this: After the canula has been in position for two, three or four months, there comes upon the posterior upper edge a "spur" and it is the pressure of this "spur" of granulation tissue that is causing the stenosis. There is nothing except the adopting of some other procedure that can possibly overcome it. A change in the form of the canula will often do this, but a still better method is one we have pursued in these cases. It means a forcible dilation through the tracheotomy wound by urethral sounds. They are introduced rapidly, beginning with the smallest sound that will enter into the larynx, then putting in an intubation tube and taking out the tracheotomy tube altogether. In this case where I had this difficulty, the intubation was done now, I think, about six weeks ago. The tube has been changed once since and the boy has been home (he was in the hospital for a year) and has been going to school, there is no coughing out of the tube, and it is Dr. Rogers' hope that at the end of six months we will be able to take the tube out altogether.

"Now as to the German and American statistics: The statistics are rather in favor of Thost, but Rogers' statistics are also very good. He has had one or two fatal cases, cases of secondary pneumonia or something of that sort following work on the larynx.

"In Dr. Jackman's case I advised against any general surgery. I do not think that it was in Dr. Jackman's mind, but I didn't feel that there was any necessity of going in and doing any general surgery on the larynx. The man is in good condition. The usual experience is that after removing one cicatrix you are only having the other fill up more, so gradual dilatation by Schroetter's tube, as we have attempted it, or the intubation tube, as Rogers is doing, through the mouth and through the tracheotomy wound, are the best methods to be pursued, and even in cases apparently most hopeless admirable success can be secured if we do not get discouraged."

Dr. Hubert Arrowsmith, in discussion, said: "I haven't anything further to say except that I rather take issue with Dr. Harris' idea that surgery would not do any good in this case. I should think that it was a case which is admirably adapted to laryngostomy.

"My personal experience with Schroetter's tubes has been that they are a waste of time. They haven't accomplished anything and they have used up time that might otherwise be profitably used.

"I should think that this patient should do well under laryngostomy. With the tube devised by Koschier of Vienna,* he would be able to get around and attend to his work as well as with the tracheotomy tube. Practically the same result would be obtained as Rogers obtains with prolonged intubation. Perhaps, after a time, it might be a case for the Rogers' intubation tube, but I think that he would now do well under surgery as I have suggested.

## Consideration of Suspension Laryngoscopy (With Demonstration of Method).

*Wolff Freudenthal, M.D., of Manhattan.*

If I may, I will demonstrate the patient later on and shall first make the remarks which I have to make and would like to go directly medias in res; to the needs and indications for suspension laryngoscopy.

For a long time we all felt that we wanted to bring the picture of the larynx closer to our field of vision and to widen the field of intralaryngical surgery, in other words to be enabled to work with both hands. These things have been fulfilled by the Killian suspension laryngoscopy. But just as antisepsis was only the forerunner of asepsis, so suspension laryngoscopy may be the forerunner of something that is developing now or may develop in the next few years, is a much simpler method.

There are at the present time a few instruments out claiming to take the place of suspension laryngoscopy, and I may mention these first: In the German literature I read an article by Réthi, of Budapest, published not long ago, in which he describes a new apparaus which he calls distractor and his method is called distractio laryngis. This instrument for the *indirect* examination of the larynx has two prongs posteriorly and one anteriorly. It is inserted into the larynx and the latter is thus immobilized, the glottis opened ad maximum, the vocal cords are fixed, the epiglottis is pressed forward, the anterior commissure can be seen with ease and it is not necessary to hold the tongue. Endolaryngeal operations are thus made very easy.

In New York City there are at the present time three instruments out and I might call the method of all three; suspension laryngoscopy without suspension. The first one is by Dr. Glogau. He has asked me to demonstrate this instrument. It is inserted in the larynx and can be opened wide, when the patient is in the prone position. It is a modification of Strüchen's instrument.

Then Dr. Unger has brought out another instrument with the same idea and, finally, there is an instrument (a report of which has already been published) devised by Dr. Lynah, of New York, which seems to be very good, but I haven't used it as yet. All these instruments have not been tried sufficiently and for the present we have to do with suspension laryngoscopy as it is now.

As to the indications for the method: I personally have used it most often in cases of tuberculosis of the larynx and in such cases it is beautiful to see how well this method fulfills the requirements that we expect of it. You are able to see the whole larynx and hypopharynx and if there are a number of ulcerations you can curette them in one sitting and remove infiltrations at the same time. This is a very important factor because in many of these cases the patients cannot take any food and the danger to life is imminent. If you have a tubercular patient with a high fever or haemoptosis you will not subject him to this method, but in the majority of other cases you can use it to great advantage. I never like to think of the great number of cases that I see, nowadays which show a primary t.b. affection of the larynx without any involvement of the lungs. Such cases may go on for months where you cannot detect anything in the lungs or sputum, but where there are distinct signs of laryngeal tuberculosis. These cases I would compare with the clinical findings in cases of carcinoma of the larynx. In both we have to proceed often according to our clinical experience only and not wait for positive signs microscopically or bacteriologically. If we knew how far the infiltrations extend in laryngeal t.b., we could remove them thoroughly. But that is an unknown factor and we have to be guided by the thickness of the vocal cord and its surroundings and so on. I think it might be best to remove in some cases the whole interior of the larynx, including the arytenoids, but that has not been done and I doubt whether it can be done to the advantage of the patient. At any rate, after thorough curetting of the larynx, you want to be careful lest an edema may occur.

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* As Mueller, the instrument maker, of Chicago, has modified it, at my suggestion.

There are other cases which are an excellent field for suspension laryngoscopy and these are foreign bodies in the larynx or hypopharynx, in children, as well as in adults. If an adult comes to your office with a foreign body in the larynx and you have no suspension apparatus on hand, you use any method you know of to get rid of the foreign body. But if you have the time and the patient can wait, why the best thing to do is to arrange it so that you may use your suspension apparatus. As soon as you place the patient on the table with the head downward, one of the great dangers in these cases is eliminated and that is the danger of aspiring the foreign body further down. This may happen by itself if the patient takes a deep breath, or it may happen in consequence of the manipulations of the laryngologist. In all these cases I do not see why the straight method with a tube is being used at all. Of course, in the hands of some of our men this method is excellent. I might mention here Johnston, of Baltimore, and several others. They do excellent work. But I think that the suspension method is much easier and much safer.

In children, the indication for suspension in these casse is much stronger. I would not hesitate at giving general anesthesia in such a case if the patient is unruly; that is a child or adult; and with this we come to the question of anesthesia.

We apply local or general ANESTHESIA. In the beginning of my work in this field I used Dämmerschlaf with morphin and scopolamin, of which you read so much in another branch of medicine, but to very little advantage for my patients. Most of our hospitals are so noisy and there is so much traffic in the hospitals that the patients here in New York do not get the rest required for such pre-operative treatment. I have not not seen any use of giving morphin and scopolamin in such cases and have accordingly discarded it entirely. Fifty per cent of the success in these cases depends anyway upon the patient himself. If the patient does not want to sit quietly and does not want to breathe easily he will not do it unless you give him general anesthesia.

In applying cocain, novocain and adrenalin you want to be careful not to exhaust the patient before you start in with your real work. You have to avoid gagging and coughing and all the reflexes as much as possible. At home I spray the entrance of the larynx and pharynx with a 5 per cent cocain solution and then use 20 per cent solution of cocain in the pharynx (the posterior wall), on the tongue, in front of the tongue, which is very important and should not be forgotten, and in the larynx, too. After that I apply adrenalin.

The question of anesthesia is especially important in children. In infants and young children, we may get along without any anesthesia at all. In older children, a dose of codein given before operation is very good and I have seen excellent results from that.

There is another method which has been used extensively, especially here by Arrowsmith, and that is rectal anesthesia. In some of my cases it worked remarkably well. The patients did not know beforehand that they were going to be anesthetized. They got their rectal anesthesia in bed and were taken to the operating room and returned without knowing anything at all of the operation. Of course, these are ideal cases. It does not always go as well. At the last meeting of the German Medical Society of New York, we had a discussion on anesthesia. It was reported that at the German Hospital a patient died from the effects of ether several hours after the operation was over. It seems that the quantity of ether given to the patient could not be eliminated from the system.

Returning to the question of foreign bodies we should not forget that Killian's suspension laryngoscopy not only enables us to inspect the larynx, but the hypopharynx as well. And this is the place where so often foreign bodies are found in children. It is not always easy to unfold the hypopharynx. If traction is exercised on the larynx, thus pulling it away from the oesophagus, the hypopharynx will be seen easily and the extraction of a foreign body is only a question of seconds. It may be better, though, to use an instrument recommended by A. Seiffert of Breslau and independently also by Lynch of New Orleans. These two instruments seem to be identical, and are simply old Kramer's nasal specula wih prolonged prongs.

When children are under suspension they sometimes stop breathing and that happens after you have introduced the tongue spatula. Such an occurrence you have all seen when you operate on tonsils. When you open the mouth gag some children will stop breathing and nothing will start the breathing again except the removal of the mouth gag. I think that phenomon is a reflex action, perhaps the result of a spasm of all the respiratory muscles because it has happened in cases where a tracheotomy had been done before and the trachea was wide open; so we cannot explain it otherwise than by a spasm of all the muscles.

If cyanosis is very deep you have to interrupt the manipulations right away, naturally, and wait a few minutes and start in again. In other less pronounced cases it is advisable to apply a 10-15 per cent aloypin sol. directly to the vocal cords. Some men have even advised doing it in every case in children beforehand. But there is a possibility that the child might stop breathing for another reason, and that occurs when you compress the larynx unwittingly. In that event you can diagnosticate the trouble very easily by looking into the larynx. You will then see only the hypopharynx, while in another case, with the apparatus in the right position, you will be able to see the vocal cords and the larynx itself. In the event that the apparatus is placed wrongly you have to take it out.

The importance of suspension laryngoscopy for the removal of PAPILLOMATA in children has been brought out in an excellent paper by Dr. R. Levy, of Denver, who reported a number of cases operated on in that way. His last case is the most important one. In that particular case the patient, a child only 8 months old, had been aphonic for three months. The interest attached in this case is the youth of the child which in no way interfered with the ease and "delightful practicability" of the method, as Dr. Levy puts it.

Some important cases have also been reported by Iglauer, Yankauer and Albrect. In all cases of papilloma of the larynx in chidren the anesthesia is very important, naturally more so, in pronounced cases, and it is best to be prepared for a hurried tracheotomy in all these cases.

In a former paper I have drawn attention to abscess formation and the opening of the abscesses under this method and I can only confirm what I said two years ago.

I would speak here again of retropharyngeal abscesses. In my clinic a good many of these abscesses are opened by my assistants in the upright position every week. When precautions are taken, the pus is evacuated easily and without danger. But when the abscess is deeper down in the pharynx, as happens not infrequently, or when there is abscess formation in the larynx itself, then the upright position is absolutely contraindicated.

A child is easily put on any table with the head hanging down, but an adult ought to be operated on under suspension laryngoscopy. This, to my knowledge, is the only safe method at our disposal. With the head hanging down and the pus having an opportunity of running into the upper portion of the retropharynx and not clogging up the larynx, breathing will never be interfered with and nothing can happen to your patient.

Whoever has had a case like the one that I reported several years ago will certainly not forget. Permit me to mention it here again. A patient suffered from a peritonsillar abscess which had been opened by somebody else and when I came to her there was no abscess in the tonsils, but there were abscesses in both arytenoids to such a degree that tracheotomy was indicated at that moment. But the patient, who was a young woman, objected to that and was brought to the hospital (that was before we had suspension laryngoscopy). In the usual position, by the indirect methods, I opened one abscess and patient expectorated a great deal of pus. I thought that I would finish the work and open the other abscesses also, which I did. A few seconds later the patient collapsed and fell to the floor and I had all I could do to bring her to after I did a very hurried tracheotomy.

If you operate on these cases under suspension laryngoscopy, the pus and all the secretions will naturally flow into the vault of the pharynx and every danger of asphyxiation is eliminated.

Further I want to mention some cases where the picture under suspension laryngoscopy is entirely different from that which we see generally by the indirect method.

I had a woman who was suffering from articular rheumatism and there were seen in the larynx blebs, watery blisters, etc., which interfered with respiration. At that time I had commenced to work with suspension laryngoscopy. I put her under suspension and saw quite a number of these blebs, i. e., more than could be seen before. A colleague from Philadelphia was at my clinic at that time and said that if he had a small mirror he could look and see what was going on below. The mirror was accordingly introduced and we saw an entirely different picture. There was quite a number of little swellings below the glottis.

Then there was another case of a young man of 20. When he came to the clinic for the first time I saw a grayish looking web in the subglottic region. That had formed after tracheotomy which had been done several years previously. In that case, under suspension, there was observable a reddish-grayish mass, which turned out to be granulation tissue so often seen after tracheotomy.

I don't want to go into further details because the time is too short and I will finish my brief remarks and say that whatever may be the changes in the system of suspension laryngoscopy it has come to stay and has added one more great point in that field in which we are working: the field of laryngoscopy which twenty-five years ago was to be found in some small corner of a large scientific building called General Medecine, but which has grown now to such an extent that in this one city of New York TWO good societies are working in the same field.

DR. IMPERATORI, in opening the discussion, said:

"It would seem almost the height of presumption for me to discuss Dr. Freudenthal's paper. However, as they usually say in opening a discussion with a limit of a few minutes, Dr. Freudenthal failed to mention Dr. Mosher's very splendid instrument in the use not only of suspension, but near-suspension. The Lynch instrument is also an exceedingly good instrument. These other instruments, such as Strüychen's modification, I know nothing about. In fact, it seems to me, they are almost impossible instruments to use.

"I am glad to know that Dr. Freudenthal uses aloypin in children. I have some experience with children and, ordinarily, I use absolutely nothing—simply swab the unruly children and put them in the suspension apparatus. It seems to me they are the easiest subjects to work on. Children and women and long-necked individuals are the proper cases for a suspension demonstration it would seem.

"Regarding the removal of foreign bodies in the larynx, pharynx and laryngopharynx: it seems to me that the suspension method is the method par excellence.

"As to the removal of growths, etc.: the forceps is the proper instrument to use.

"As to doing an epiglottectomy: the method suggested to me by Arrowsmith seems to me to be an exceedingly splendid method of operation and the technic of that I might mention just in passing. We simply put the patient in the suspension apparatus without using the epiglottis holder and with a uterine volsellum forceps grasp the epiglottis and with a pair of uterine scissors we make two slips on the right and left side of the epiglottis, slip a tonsil snare over the volsellum, push it well down and your epiglottis is out before you know it.

"I want to congratulate Dr. Freudenthal on his demonstration."

(To be concluded)

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# CARDIORRHAPHY.*

## A Case Report.

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Brooklyn-New York.

T. L., an Italian laborer, 32 years old, on May 10th, 1914, stabbed himself in the left chest with a long, sharp, narrow bladed knife. He was brought to the Brooklyn Hospital by the ambulance shortly after. Shock was pronounced. His pulse was imperceptible. Urination and defecation were involuntary. The house surgeon considered his condition critical and immediately started saline hypodermocylsis in both axillae. When I saw him, forty-five minutes later, his condition had improved, the temperature was 96, pulse 120, respirations 32; there was a non-penetrating stab over the left second rib, outside the mammary line; also a penetrating wound, three-quarters of an inch long, in the fourth left interspace, two inches inside the mammary line, from which a small stream of blood trickled. The left chest was tympanitic anteriorly and dull behind the posterior axillary line. Apex impulse was not seen, but was felt and heard at its normal location. The heart sounds were faint, but otherwise normal. Diagnosis: Hemopneumo-thorax, with an apparent spontaneous arrest of hemorrhage, with a wound in the precordium, caused by a long-bladed knife, strongly suggested heart puncture. Whatever the source of the hemorrhage, I thought it highly probable that it would recur when blood pressure rose; therefore, I believed that exploratory thoracotomy was indicated. My confidence in this procedure was greatly strengthened by a lecture and demonstration which I heard given by Dr. B. M. Ricketts, of Cincinnati, at the New York Polyclinic, during the meeting of The Medical Society of the State of New York, a few days before.

Operation: Intra-tracheal ether anesthesia with oxygen was administered by Dr. G. W. Tong. Three ounces of ether were used. Sufficient pressure was used to keep the lung about two-thirds expanded; 60 mm. of mercury. The chest was painted with tincture of iodine two-thirds strength. The incision was started in the second interspace, at the mammary line and carried to within one inch of the left border of the sternum, then downward, outside the line of the internal mammary vessels, to the middle of the fifth interspace, then outward to the mammary line; this included intercostal muscles, third, fourth and fifth cartilages and pleura. This flap was reflected outward and the ribs fractured. This gave good access to the left pleural cavity and left side of the pleuro-pericardial sac. About one pint of fluid and clotted blood was mopped out of the pleural cavity, no wound of the lung nor actively bleeding point being found. The heart was palpated through the pleuro-pericardial partition, which clung so closely to the organ, that it was evident there was no hemo-pericardium. During my manipulations at the upper portion, the traction revealed the tip of the left auricular appendix and upper margin of a pericardial opening being withdrawn from a hole in the antero-lateral wall of the left auricle. This was about one-half inch long and located just below the sulcus which marks the junction of the auricle with its appendix. Following this, with systole, a spurt of blood came. When diastole followed, the wound gaped and air entered the cavity. I plugged the opening with the tip of my left little finger, until I could clamp it, then inserted a continuous chromic suture through the pleuro-pericardial membrane, myocardium and endocardium and hurriedly closed the chest wound. A rubber tube was introduced through the original stab wound to drain the pleural cavity. An infusion was given in the right saphenous vein. The sutures were introduced during one diastole, then needle and holder were allowed to follow the heart when, during systole, it dodged back under the right margin of the thoracic wound. The operative findings explained very nicely the evident spontaneous arrest of hemorrhage (*i. e.,* opening plugged by suction into it of auricular appendix) and absence of hemo-pericardium. (Because the two openings were so closely approximated that the blood passed directly from the auricle into the pleural cavity.)

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* Read before the Brooklyn Surgical Society, Dec. 3, 1914.

The patient's convalescence was complicated by moderate serous effusion in the pericardial and both pleural cavities. He left the hospital on the twenty-fifth day, recovered. Five months later two medical men were unable to find anything abnormal about his heart.

*Historical Resumé:*

Before the time of Ambrose Paré (1509 to 1590) heart injuries were thought to be always immediately fatal. He observed that this was not true and reported the case of a duellist who was wounded in the heart by a rapier and afterward pursued his opponent for several yards.

In 1868, Fischer collected all published reports of human heart injuries, 452, and showed that many of the patients lived several hours, some for days, and 7 per cent to 10 per cent recovered.

In 1881, John B. Roberts, of Philadelphia, suggested before the Anatomical and Surgical Society of Brooklyn the advisability of suturing human cardiac wounds.

In 1882, Block, of Copenhagen, demonstrated the feasibility of suturing cardiac wounds in animals.

In 1896, Farina, Cappelan, and Rehn sutured wounds of human hearts. Farina's patient lived six days and died of pneumonia. Rehn's patient recovered.

In 1901, Nietert published the first two American cases, Vaughn reported another case and collected twenty-six from English, German, French and Italian literature.

In 1909, Vaughn reported his second case and carefully analyzed one hundred and fifty reported cases, fourteen of which were American.

At the present time I have found, including my own, thirty American cases, eleven of which are from Philadelphia. Five of these are by one man, Francis T. Stewart. Four are from Manhattan, one each by Blake, Peck, Pool, and Erdman.

*Pathology of Heart Injuries:*

Immediate death occurs in 18 per cent from shock to the nervous mechanism; from injuries of the Kronecker-Schmey center, which is probably the bundle of His; or from a very large opening. Cases in which contusions of the chest produced rupture of the heart muscle, without rupture of pericardium, are reported.

Statistics based on autopsy findings show most injuries of the right ventricle. Ninety per cent of the operated cases were wounds of the ventricles, about equally divided between right and left, which had practically the same mortality. In the 237 cases collected by Peck and Pool, 13 were of the right auricle, with 6 deaths; 10 were of left auricle, with 3 deaths; the remainder, in which the location was given, were of ventricles. This indicates that wounds of the left auricle are least common and least dangerous. It does not bear out the earlier statements that wounds of the auricles are the more fatal.

Cases of stab and bullet wounds of the pericardium and non-penetrating wounds of the myocardium are reported. Wounds caused by hat-pins, knitting-needles, etc., have made small punctures with no serious results; they have also caused extensive lacerations. The wounds of nearly all operated cases were caused by stabs or bullets. In 90 per cent the left pleura was injured; in 5 per cent the right; therefore in only 5 per cent the pleurae escaped. The external wound may be anywhere between the first costal cartilage and umbilicus; 80 per cent were between the third and sixth left ribs.

Spontaneous arrest of hemorrhage some times occurs. A clot forms, which is sufficient, while blood pressure is low, but is likely to be expelled and cause secondary hemorrhage, when the patient begins to recover from shock and primary hemorrhage; this is said to occur most frequently in the left ventricle, because of the columnae carneae, which help plug the opening. In my case, suction into the opening of the tip of the overlying auricular appendix was the mechanism. In most cases spontaneous arrest does not occur, and the effects of hemorrhage are manifested along two distinctly different lines. First; when the pleuro-pericardial opening is free, blood escapes into the pleural cavity, causing hemo-thorax and death from loss of blood. Second; when a pleuro-pericardial opening does not exist, or is smaller than the myocardial opening, or is more or less completely occluded, a comparatively small amount of blood within the inelastic pericardial sac compresses the walls of the auricles and roots of the great veins to such an extent that circulation of blood through the chambers of the heart and coronary arteries is gradually reduced, with corresponding reduction in the force of heart contraction, until pulsation ceases. This was first described and called "Heart tamponade" by Morgagni in 1761. It has been confirmed many times since. The causes of closure of the pericardial opening are the following; first; clot, which is effective only when blood pressure has fallen very low as a result of shock or hemorrhage. Second; displacement of the myocardial opening, so that it does not coincide with the pericardial. This occurs somewhat at each heart beat, and as hemo-pericardium is increased, the relation of the openings is further changed, because the blood collects in the lateral and posterior recesses, thus crowding the heart forward against the anterior portion of the sac. The greater the pressure behind the heart, and the less complete the diastole and systole, the more completely is the pericardial opening occluded, if it is in the anterior portion of the sac. Third; a small puncture of the pericardium may accompany an extensive myocardial opening, as for example, impalement by a hat-pin, upon which the heart, by its own contractions, tears itself. Fourth; heart tamponade is relatively more common and develops more rapidly in those cases in which neither pleural cavity is opened. The usual sliding of tissues obstructs the outlet.

A moderate degree of heart compression lessens hemorrhage and is thus beneficial, but when extreme, it is rapidly fatal.

Wound of coronary artery: This has been reported with wounds of the ventricles and is considered to be a very dangerous complication but the vessel has been ligated with recovery in some cases.

Multiple wounds: Two wounds of one cavity, that is anterior and posterior wall, and simultaneous wounds of two cavities with recovery have been reported.

Air embolism: Carrel states that entrance of air into the right heart is not serious, but in the left it is likely to enter the coronary arteries, causing fibrillary contractions and death. This has not been noted in any clinical case.

Infection: Vaughn, from his study of 150 operated cases, has shown that 86 per cent of the deaths, which occurred twenty hours or longer after operation, were caused by infection, and that only 25 per cent of the patients who recovered were free from infection. The locations in order of frequency were as follows: First, pericardium and pleura; second, pleura; third, pericardium; fourth, lung; fifth, peritoneum.

Secondary rupture: A few non-operated, and at least one operated case, are reported in which dilatation and rupture, at the site of the healed wound, occurred more than one month after the injury. A postmortem examination of Stuart's first patient, five years later, showed the heart wall, in the region of the wound, thin and dilated. An x-ray examination of Proust's patient showed the same, although his health was good.

Symptoms: Shock usually accompanies injuries of the precordial and epigastric areas; this depends more on the character and extent of the superficial injury, than the presence of heart penetration. Severe shock does not necessarily indicate heart wound, nor does absence of shock exclude it. Probably the mental state of the victim has an important influence on the degree of shock developed. Most of the cases are attempted suicides or the objects of murderous attacks. Stewart has explored several non-penetrating wounds of the precordial area, because the condition of the patients seemed as serious as that of some of those whose heart wounds he had sutured.

Hemorrhage: The visible external hemorrhage comes from superficial tissues of the chest, and is usually trifling. Escape of blood from the pleural cavity is prevented, in a small wound, by tortuosity of the tract which is caused by sliding of the tissues. Hemo-pneumothorax is present in 95 per cent of cases. When the patient is lying down this, if sufficiently extensive, gives dullness posteriorly and tympany anteriorly. Symptoms of internal hemorrhage are obscured by shock. The pulse is weak, not always rapid. Hemorrhage into the pericardial and one pleural cavity is the rule. Hemo-pericardium, causing heart compression, gives the following signs; moderate lateral increase of precordial dullness, weak or imperceptible apex impulse, because of diminished volume of blood and consequent weak muscular contractions; cynosis and distension of veins of face, neck, and arm; unconsciousness, because of cerebral venous congestion.

Extraneous cardiac sounds are described by Nietert, that is whistling and splashing, and believed by him to be due to passage of blood through a pleuro-pericardial opening. Stewart heard them in only one of his five cases, and when the thoracic wound was plugged, they ceased.

Diagnosis: With the exception of those cases in which the weapon remains imbedded in the heart muscle with a free external portion to act as an indicator for each heart beat, and those, in which the external wound is so large that hemorrhage from the heart can be seen, there are no positive signs of heart wound. The diagnosis should be suggested by the character and location of the external wound and confirmed or disproven by exploration. This may be a pericardial puncture, pericardial incision, or transpleural exploration. Hemopericardium does not always mean a penetrated heart cavity as it may occur, causing fatal tamponade, with a pericardial wound only.

Treatment: Small punctures, which close after withdrawal of the implement, heal with no treatment except rest. Larger wounds should unquestionably be sutured immediately. All cases should be considered extremely urgent, even though reports show that many of the patients were not operated for several hours, and one went four days.

Preparation: The urgency of the case usually demands that preparation be rapid, while the susceptibility of pericardium and pleura to infection requires that it be thorough. Tincture of iodine best meets these requirements.

Anesthesia: Those patients who are comatose from severe heart compression need no anesthetic until compression is relieved, when they regain consciousness. They do not need anesthesia for the heart suture as this does not cause pain. Local anesthesia should be sufficient for closure of the operation wound. For the conscious patient, ether-oxygen intratracheal anesthesia seems to me ideal; sufficient pressure can be maintained to keep the lungs expanded, even though both pleural cavities are opened, and free oxygenation can be constantly maintained.

The operation: The early methods of approach aimed to avoid opening the pleural cavities, because of fear of pneumothorax, but as one pleura is injured in 95 per cent by the original wound, and most of the operators accidentally wounded it, and pericarditis and pleuritis followed extrapleural operations, it seems that this should be attempted only in the few cases in which neither pleura is injured and the patient's condition is not urgent. The heart wound can be much more quickly reached by the transpleural method. Some of the openings through which heart wounds have been sutured are: A trap door containing the third, fourth, and fifth costal cartilages, hinged at the margin of the sternum, and reflected toward the median line; the same, hinged at the mammary line, and reflected outward; excision of one or more costal cartilages; resection of a portion of the sternum; trap door of a portion of sternum and costal cartilages. While the location and character of the wound should, in each case, determine the method of approach in that individual case, the method which seems to me to be most generally applicable, is the one mentioned by Matas, in Keen's System of Surgery, as having been independently recommended by Spangaro, Durante, Wilms, Miculecz and Sauerbruch. It is suitable for all cases in which the external wound is in the precordial area and presence of pneumothorax is certain. An incision through skin, intercostal muscles and pleura is made in the middle of the fourth intercostal space, from the anterior axillary line to the left margin of the sternum. The fourth and fifth ribs are strongly separated; this gives sufficient exposure for the operator to inspect and palpate a large portion of the left pleural cavity and left pleuropericardial surface and suture a wound on the anterior surface of the heart. The sternal end of the incision may be extended upward through the fourth and third costo-sternal articulations and overlying tissues, or downward through the fifth and sixth, which gives sufficient room to reach the posterior surface and auricles. If pneumothorax is not certain Kocher's, or some similar, pericardotomy incision should be made first; then, if hemopericardium and pneumothorax are present, extended into an intercostal space through the pleura. Pleura and lung should be protected by silk-covered compresses since, according to Carrel, they are less irritating than gauze. The pericardial wound can be located by palpation more readily than inspection. It should be enlarged in a vertical direction and the cavity gently emptied of fluid and clotted blood. The myocardial wound may be clamped, or plugged with the finger, until the operator is ready to introduce the first suture. After this is placed it may be used as a tractor, which will greatly reduce hemorrhage and facilitate introduction of the remaining sutures. The heart may be grasped and pulled forward, or rotated, or the pedicle compressed, or angulated, if necessary to reach the posterior surface, or stop hemorrhage, or to control the heart's tumultuous action. This procedure should be preceded by over-oxygenation and should not be continued over three minutes. Carrel has shown that the pedicle of a dog's heart can be clamped for this length of time without danger.

Opinions differ as to whether silk or catgut sutures should be used and whether interrupted or continuous are preferable. The statement is repeatedly made that sutures should be introduced during diastole and should not include endocardium, because of danger of thrombus formation. Study of reported cases shows one case in which the silk suture was discharged through a sinus and none in which the catgut gave way; those in which continuous sutures were used did as well as those in which interrupted were used and the continuous can be inserted more rapidly and controls leakage better. Two rows of interrupted were sometimes necessary. Some operators found it impossible to pass sutures during diastole, so introduced them regardless of the time of the cardiac cycle; in one case in which the endocardium was included in the suture death was ascribed to thrombus. In several others recovery followed with no complications referable to this technique. Continuous sutures of chromic catgut, introduced at the most convenient time in the cardiac cycle, and including the endocardium, have proved satisfactory and are most readily applied. Inclusion of endocardium, especially in the auricles, adds much to the firmness of closure as one who has felt the resistance which this structure offers to passage of the needle readily appreciates. My patient shows no ill effects from having had parietal pleura, pericardium, myocardium, and endocardium included in one continuous suture. The pericardial and pleural sacs should be closed without drainage. Experimental work has shown that a free communication between these cavities is compatible with good health in animals. Werelius suggests that if such a communication were left in operated cases the mortality might be reduced, by making the development of heart compression from pericardial effusion impossible. This has been done in clinical cases only when both cavities were drained. The thoracic wound should be carefully closed in layers. When the last sutures are tied the lungs should be fully inflated to lessen pneumothorax.

Results: Smooth convalescence has been the exception. Some pleuritis and pericarditis usually occur. The sutured wound heals in two weeks with scar tissue, not muscle regeneration. Adhesions between pericardium and myocardium are the rule, but they do not interfere with heart action, or cause pain, unless the pericardium is also adherent to the chest wall.

The mortality of 260 cases, collected by Wagner in 1913, was slightly over 50 per cent. This, in a general way, means, if the same proportion of successful and unsuccessful cases have been reported, that one-half of the 80 per cent of heart wound cases in which death is not immediate, recover. In other words, cardiorraphy has raised the percentage of recoveries from 15 per cent to 40 per cent. Nearly all the recovered cases were able to resume their former occupations.

### CARDIORRHAPHY, AMERICAN CASES

| | | | |
|---|---|---|---|
| Billings, Phila. | | | |
| Bradbury, “ | | | |
| Brewster & Robinson, Boston | 1911 | L. V. | Died. |
| Blake, N. Y. | 1907 | R. V. | Recovered. |
| Duffy, N. Y. State | 1908 | R. A. | Died. |
| Erdman, N. Y. | 1910 | R. V. | Recovered. |
| Gibbon, Phila. | 1902 | R. V. | Died. |
| “ | 1905 | R. V. | Recovered. |
| Harte, Phila. | 1906 | L. A. | Died. |
| Hill, Alabama | 1902 | L. V. | Recovered. |
| Mitchell, Phila. | | | |
| Krichner | 1909 | L. V. | Died. |
| Kushena | | R. V. | Recovered. |
| McCabe | 1909 | R. V. | Died. |
| Nietert | 1901 | R. V. | Died. |
| “ | 1901 | L. V. | Recovered. |
| Peck, N. Y. | 1908 | R. A. | Recovered. |
| Pool, N. Y. | 1911 | L. V. | Recovered. |
| Rassieur | 1903 | L. V. | Recovered. |
| Rassieur | | | |
| Stewart, G. D. | 1902 | L. V. | Died. |
| Stewart, Francis T., Phila. | 1904 | L. V. | Recovered. |
| “ “ | 1909 | L. V. | Recovered. |
| “ “ | 1910 | R. A. | Recovered. |
| “ “ | 1910 | L. V. | Died. |
| “ “ | 1911 | R. V. | Died. |
| Vaughn, Washington, D. C. | 1901 | L. V. | Died. |
| “ “ | 1908 | R. V. | Recovered. |
| Long, Brooklyn, N. Y. | 1914 | L. A. | Recovered. |

### LITERATURE ON CARDIORRHAPHY.

G. Fischer, *Arch. f. Klin. Chir.*, 1868, Bd., ix.
Delatour, *Am. Jour. Surg.*, 1909, xxiii.

Rehn, *Jour. Exp. Med.*, v, vi.
Nietert, *Interstate Med. Jour.*, 1901, pp. 563.
Vaughn, *Med. News*, Dec. 7, 1901, p. 881.
*Jour. Am. Med. Assn.*, Feb. 6, 1909, pp. 429-439.
Peck, *Trans. Am. Surg. Assn.*, 1909, pp. 162-198.
Werelius, *Jour. Am. Med. Assn.*, Oct. 17, 1914, p. 1338.
Matas, *Keen's System of Surgery*, vol. v.
Pool, *Ann. Surg.*, Apr., 1912, lv, 4.
Stewart, *Am. Jour. Med. Sci.*, Sept., 1904.
*Ann. Surg.*, July, 1913, lviii, 1.
Carrel, *Tr. Am. Surg. Assn.*, xxviii, pp. 243-255.
*An. Surg.*, July, 1914, lx, 1.
Blake, *Ann. Surg.*, 1908, xlviii, p. 138.
Erdman, *Med. Rec.*, 1910, lxxviii, p. 1095.
Proust, *Ann. Surg.*, June, 1914, lix, p. 968.
Ricketts, *Surgery of the Heart and Lungs*, 1904, Grafton Press.
Harte, *Ann. Surg.*, 1907, xlv, pp. 672.
Rassieur, *Jour. Missouri Med. Assn.*, 1909-10, vi, pp. 316-320.
Stewart, G. D., *Tr. Col. Phys.*, Phila., 1904, p. 145.
Gibbon, *Col. Phys.*, Phila., 1904, p. 161.
Editorial review *Ann. Surg.*, Oct., 1899, xxx, p. 518.

(For discussion see page 353.)

# THE COMMITMENT OF THE INSANE.

## Points of Interest to Medical Practitioners.

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OWING to the numerous amendments to the Insanity Law during recent years, it is probable that some of the new provisions are not generally known even among regularly registered Examiners in Lunacy, and it was, therefore, thought it might be of some interest to discuss certain features of the law in their relation to the medical profession, especially in connection with the commitment of the insane.

While the main provisions of the regular method of commitment are generally known, it is not so well known that the regular method constitutes but one of four methods by which a patient may be admitted to a State hospital. The four methods are the regular court order commitment, the emergency commitment, the voluntary admission, and the emergency admission, each of which will be considered in order.

The first or usual method of commitment is, as you are all doubtless aware, by court order issued after the presentation to the court of a petition for an alleged insane person's commitment and a certificate of lunacy executed by two regularly qualified Examiners in Lunacy within ten days next before the granting of the order. There are numerous required details in connection with this form which are not infrequently overlooked, and then the hospital authorities are compelled to assume an apparently arbitrary attitude in refusing admission to a patient, for the statutes require the superintendent to take such action when a commitment paper fails to comply with the provisions of the law, or if in his judgment a patient is not insane within the meaning of the law. Among the details which occasionally cause difficulty is the matter of dates, for not only must the medical examination take place within ten days before the order is granted, but a patient must be transferred to the hospital within ten days after the order is granted. It occasionally happens that the medical certificate is signed by practicing physicians, who have failed to qualify as Examiners in Lunacy, which of course invalidates the whole paper. In this community, at least, there has been no difficulty by reason of the violation of that provision whereby no physician shall sign a certificate of lunacy, if a relative either of the person making the application or of the alleged insane person. Neither can a physician, even if otherwise qualified, sign a certificate if in any way connected with the institution to which it is sought to commit a patient. It but rarely occurs that a commitment is made out on other than the official blank furnished by the State Hospital Commission, as the law requires, but such an instance did happen within recent months, when a physician sought to send a patient to this hospital accompanied only by a written statement on an unofficial blank. He apparently failed to realize that the action of the hospital in refusing to accept the patient was rendered mandatory by the law, as he characterized such action as "red tape."

A matter which perhaps is not strictly within examining physicians' province but which so often renders a commitment invalid, that examiners should be acquainted with it, is the matter of personal service. At least one day before the petition or application for commitment is presented to the court, a notice of the proposed action must be served on the patient, and, if the application is to be made by a poor official, a similar notice must also be served upon the patient's next of kin, or the person with whom he resides, or at whose house he may be, should there be no known relatives. The only occasion when personal service upon the patient is unnecessary is when a Judge dispenses with it and states his reasons for so doing in a certificate attached to the petition, or directs substituted service for that upon the patient, indicating the name of the person upon whom substituted service is to be made.

The cases in which a question arises as to whether the patient is a proper case for treatment in a State hospital, are usually cases of defectiveness or of simple senile decay. The law reads that no idiots shall be committed to or confined in a State hospital. Neither can an epileptic or a feeble-minded person be received unless in addition to the original epilepsy or feeble-mindedness there be definite evidence of insanity. The same is true of dotards, and in connection with the latter there is often an opportunity for a difference of opinion, as many elderly people may develop, in connection with physiological mental decline, queer ideas which scarcely attain the dignity of delusions and which are ofttimes transitory. It should be remembered, however, that the law makes the judgment of the hospital superintendent the ruling opinion in a given case.

The second method by which patients may be received in State hospitals is by emergency commitment, which appears to be fairly well known, especially among the medical profession of this district, it being in comparatively frequent use at this hospital. This provision is only to be used in such cases as require immediate care and treatment, or where there is no other proper place available for care and treatment, or if the patient be so dangerously insane as to render him a menace to public safety. In this form of commitment the usual official blank prescribed for regular court commitments is used, but that portion of the blank which is filled in by the court and known as the order is disregarded, merely the petition and certificate of lunacy being sufficient, the object being of course to obviate delay caused by securing a court order. An important requirement of emergency commitments, which is occasionally overlooked, is that the examining physicians shall incorporate in the certificate of lunacy a statement containing adequate reasons why the patient should be received in a hospital for the insane for immediate treatment, and if, in the judgment of the superintendent of the hospital, the reasons given are inadequate, or, if in his judgment the patient's condition is not such as to require immediate treatment, he may refuse to accept the patient on an emergency commitment. By virtue of this form of commitment a patient can be retained in a hospital but ten days, and, as cases for whom this form of commitment is necessary are practically never in a condition to justify their discharge within such a period, the emergency commitment is usually superseded by a regular court order commitment before the expiration of the ten days' period. A convenient practice has been adopted by several examiners in this district of making out a duplicate of the emergency commitment, forwarding the additional copy to the court for the court order, thus completing the emergency commitment paper as a regular commitment. This not only minimizes labor in making a single examination serve a double purpose but also saves time, and thus there is no danger that the regular commitment will fail of completion before the expiration of the ten days' validity of the emergency paper.

The third method by which patients are received is that of voluntary admission. State hospital physicians realize the great value to the community of this provision but, unfortunately, it has been impossible to encourage voluntary patients to the fullest extent owing to the overcrowding now existing in our hospitals. However, none of the hospitals fail to receive a few such cases and it is to be hoped that, as facilities are rendered more adequate, the number will increase, as it is certain that thus the old idea of asylums for custodial care only, unfortunately still too prevalent, will be replaced by a conception of State hospitals as strictly medical institutions, doing medical work for the psycho-neurotic, as well as for the more frank mental case. The law provides that any person who, in the superintendent's judgment, is a suitable case, who voluntarily makes a written application and whose mental condition is such as to render him competent to make the application, may be admitted without further formality, but no such person can be retained in a hospital for a period longer than ten days, after the patient has signified in writing his desire to leave. To provide a check that no improper person be kept as a voluntary patient the law further provides that the Medical Inspector of the State Hospital Commission shall examine such cases and determine if they belong to the voluntary class. Were it possible to take full advantage of this provision of the law there is no doubt but that many so-called "borderline" and incipient mental cases could be successfully treated with avoidance of subsequent complete mental breakdown and thus be relieved of the stigma of being committed as insane, for, though we believe such stigma is the result of erroneous ideas and most unfortunate, it is none the less a fact that a large proportion of the community so regard the matter.

The fourth and most recent provision for the admission of patients is by so-called emergency admission in contradistinction to emergency commitment. This form is for the exclusive use of Health Officers, who, as you are no doubt aware, are charged with the duty of seeing that proceedings are instituted for the determination of the condition of alleged insane persons, and for subsequent commitment if found necessary. The section of the law charging Health Officers with such duty also provides that, pending commitment, alleged insane persons shall be cared for in a place suitable for their comfortable, safe, and humane confinement, in charge of an attendant or some suitable person. The law specifically prohibits the commitment of the alleged insane as disorderly persons to prisons, jails, or lock-ups, nor can such persons be taken from their homes to a poorhouse for examination, and it was found, especially in rural communities, there was great difficulty in meeting these provisions respecting a proper place of confinement and proper attendance. Indeed it was found that outside the larger centers of population it was often impossible to comply with such provisions and hence the amendment was adopted that in extraordinary emergencies only, when there was no place for the proper detention of an alleged insane person, and when it was unwise to wait for either a regular or an emergency commitment, an emergency admission could be used, if, in the hospital superintendent's judgment, the necessity existed. This provision is simply to permit the State hospital itself to become the suitable place for the patient's care pending commitment. The Health Officer must make a written request for the patient's admission, which must be filed at the hospital when the patient is received, together with a statement contained in a special blank form issued by the State Hospital Commission, which statement must give information as to the emergency features of the case and must likewise embody a statement that the patient is insane and is not suffering from delirium tremens, drunkenness, or drug habit, such cases being ineligible for admission under this provision. A patent can be retained on an emergency admission blank for but ten days, thus again allowing a period during which a regular commitment on court order may be obtained.

In reviewing the four methods by which patients are admitted to State hospitals it might be well to think of them in their relative order as regards the amount of required legal formality. The voluntary admission is the simplest and is valid for an indefinite period, so long as the patient needs treatment, except as hospital residence may be terminated at any time, after the patient has given ten days' notice in writing of a desire to leave. The emergency admission is on the action of the Health Officer only, and is valid for but ten days. The emergency commitment is on the action of a petitioner and two qualified Examiners in Lunacy, and is also valid for but ten days. The regular commitment is on the action of a petitioner, two qualified Examiners in Lunacy, and the court, and is valid for an indefinite period to be terminated by the hospital superintendent on the basis of the patient's condition.

In connection with the admission of patients there are certain official orders of the State Hospital Commission which have the validity of law, the Commission being empowered by the statute to issue them. Thus a State hospital is required to send trained attendants to bring all public patients from their homes or places of confinement when committed to the hospital, when notice has been given that the patient has been committed, women patients always being accompanied by women attendants. Patients must always be in a condition of bodily cleanliness when admitted and must be provided with a full suit of underclothing and a full suit of outer clothing, including headwear, boots or shoes, and also a suitable sleeping garment. Between the last day of October and the last day of March, each male patient must also be provided with a suitable overcoat and each female patient with a suitable cloak or shawl, together with gloves or mittens. In order to avoid the possibility of introduction of infectious and contagious diseases into an institution all such clothing must be new unless otherwise authorized by the hospital superintendent.

Any patient confined in a State hospital may be discharged by the State Hospital Commission if, in the Commission's judgment, the patient is improperly detained, but otherwise the discharge of all patients except voluntary ones is, lacking court action, at the discretion of the superintendent. He must of course discharge all recovered patients, but it is his opinion which prevails as to when recovery has occurred in any given case. He may also discharge any unrecovered patient, when in his judgment such discharge will not be detrimental to the public welfare or injurious to the patient, provided he is satisfied on sufficient proof that the friends or relatives of the patient are willing and financially able to properly care for him.

Should the superintendent be unwilling to discharge a patient, the friends have two courses of action open; they may obtain a writ of habeas corpus or apply to the court for the patient's discharge on bond. As a matter of practice writs of habeas corpus are rarely successful and as a result are apt to be repeatedly obtained, there having been several notorious abuses of the privilege during recent years. An amendment to the law has, therefore, been adopted whereby upon a second or subsequent application for such a writ any party to the proceeding may introduce in evidence any testimony or exhibits regarding the patient's mental condition which were received at any former hearing or trial without calling the witnesses giving such testimony and providing that it shall have the same force as evidence as if the witnesses were again called and again testified. There has been a movement looking to the limitation of the number of applications for writs of habeas corpus permissible to an insane person under confinement, but it was found necessary to abandon such movement owing to constitutional objections.

Another course open to a patient's friends, who are unwilling to accept a superintendent's refusal to discharge a patient, is the application for the patient's discharge on bond. This proceeding can only be inaugurated after a superintendent has certified in writing his refusal to discharge a patient, giving his reasons therefor. Upon such certificate, and after the superintendent has been accorded an opportunity to be heard and upon any other proofs produced in court, any Judge of a Court of Record, in the Judicial District in which the hospital is located, may order the patient's discharge upon such security for the patient's good behavior and maintenance as he may require.

As a matter of practice very few patients are discharged outright from the State hospitals, except they have fully recovered. In the case of unrecovered patients the practice is to parole them, when it is thought that they may be able to get along at home, the law now permitting the parole of patients for periods not to exceed six months, during which time the hospital is absolved from all liability for the patient's maintenance. A liberal policy is pursued and many unrecovered patients are given a trial at home, and, if the result warrants, discharge follows. The only restriction regarding paroles, aside from a restriction prohibiting the parole of patients held on criminal orders and the parole of deportable aliens, is the restriction whereby no patient can be paroled who, in the judgment of the superintendent, is homicidal, suicidal, destructive, or dangerous either to himself or others, any of which tendencies would of course prevent the consideration of a patient for parole in any event.

In executing certificates of lunacy the medical examiners can be of the greatest assistance to the hospital by incorporating all pertinent facts known to them. The physician is often in a position to know about a patient's financial condition, a statement regarding which must always be incorporated in the commitment paper. The physician can likewise perform a civic duty in indicating the facts regarding non-residents and aliens who may not be entitled to treatment in this State, but it is in indicating all known medical facts that he can extend to the hospitals the greatest aid. During recent years there has been considerable improvement in the character of medical certificates, but the more we learn of the various forms of insanity, the more do we realize that all available data is necessary to a proper understanding of our cases. While it is of course important to know the apparent exciting cause of a mental breakdown, it is of even more importance to know the type of personality manifested prior to the appearance of mental symptoms. An abnormal depression occurring in a person normally moody, seclusive, and introspective, has a different significance than a similar depression occurring in a person normally open, frank and cheerful. Even the most apparently insignificant symptoms may prove to be of the utmost importance in comprehending the causual chain of events when brought into relation with all the other features of a case. The anamneses obtained from patients' friends are after all but the accounts of laymen, and, while of course they are most valuable, still we practically never fail to find that when there is a family physician he is able to shed light on our problem. Hence not only in the preparation of medical certificates but by letters or by what means you choose we ask for all information you can give us, regarding the cases you send to the hospital. The hospital physician needs and seeks the assistance and co-operation of the general practitioner, and is in turn only too glad to reciprocate should he be in any way able to assist the practicing physician, in connection with any problem dependent upon mental disease.

## A METHOD OF REPAIR OF THE POSTERIOR WALL OF THE VAGINA.

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THE method of repair of the posterior wall of the vagina, to be described, has been used by the writer, with some variations as to technique, for the past three years. In all some 325 cases have been repaired by this method.

A report of a series of 140 cases of relaxed or torn posterior vaginal walls repaired by this method, was published in the Medical Record, Nov. 22, 1913.

The reasons for the further consideration of this subject at this time are two in number: (1) Changes in the technique of the operation which have simplified it, made more comfortable the convalescence of the patients, and have given a larger proportion of good results. (2) A growing conviction that the more widely this method of repair is known the more frequently will the method be employed in the repair of tears and relaxations of the posterior vaginal wall.

The patient is anesthetized and placed in the dorsal position, and the skin of the mons veneris, of the inner aspect of the thighs, the outer aspect of the labia, and the skin covering the structures between the vagina and the rectum, is painted with a fifty per cent solution in alcohol of the U. S. P. tincture of iodin. The mucus membrane lining the walls of the vagina and the uterus is also painted with the tincture of iodin. Alcohol was used in place of the tincture of iodin in the preparation of the field in 20 cases operated upon during the past year. The tincture of iodin had caused some pain for the first twenty-four hours, especially at the time of urination. For this reason, as well as to the fear that the irritation from the iodin might inhibit the protective properties of the secretions of the cervix, the vagina, and its vestibule, the experiment was made of using alcohol as a substitute for the iodin. The results were not satisfactory, infections became frequent in the 20 cases in which alcohol was used in the preparation of the patent, 12 patients became infected; whereas in 20 cases immediately preceding, in which iodin was used in the preparation, there were no evidences of infection. No other change in technique was made to account for the increased morbidity after the use of alcohol.

The cervix is now examined to determine its relative size, and its relation to the fundal portion of the uterus. If there be a hypertrophy of the cervix, from trauma, congestion, or infection, or if there be a posterior flexion of the body of the uterus upon the cervix, even though the cervix be but slightly hypertrophied, the excessive portion of the cervix is removed either by an amputation, or by a trachelorrhaphy, depending on whether the woman has passed the child-bearing period or not.

No preliminary curetment of the uterus is made. First because of the extreme difficulty of making a diagnosis of an endometritis and secondly because of the harm the exaggerated, and possibly infectious discharges from above after curetment would do to the plastic surgery below. If the elongated cervix is not removed, our experience has taught us, it will act as a wedge and gradually cause a dilatation of the vaginal canal and a relaxation of the repair of the levator muscle. In this connection it has been of interest to note that these uteri after their cervices have been removed, become top heavy, and often become retroverted, but their malposition gives rise to no untoward subjective symptoms, and the conviction is being forced upon us that symptomatic if not anatomical cures will be effected in these cases of malpositioned uteri if our efforts be directed to support from below and not to suspension from above.

After this preliminary work upon the uterus has been completed, a point is selected at the lateral aspect of the mucocutaneous junction at the outlet of the vagina, that may be brought up to the meatus urinarius without too much tension. A strip of tissue is removed with curved scissors from the point first selected to a point at the distance from the meatus on the opposite side of the vagina. In the removal of this strip of tissue care must be taken not to carry the incision too high along the labia, for if care be not exercised in this regard, the outlet of the vagina will be very much reduced in its calibre after the repair is completed, making coitus painful, causing insufficient drainage of the uterine and vaginal secretions, and labor at the end of the second stage unduly prolonged and painful. After this strip of tissue has been removed, the point of cleavage is found between the posterior wall of the vagina and the anterior wall of the rectum. The dissection is begun with a knife and continued with the gloved index fingers, except in the median line of the posterior vaginal wall where the dissection must be continued with the knife, or with a pair of scissors. The dissection is continued upward and outward on either side until the vagina is separated from the rectum for a distance of from two to three inches as measured from its outlet. The posterior wall of the vagina is not removed; it acts subsequently as a shield to protect the sutured muscle and fascia below from the secretions from above, which, in case the cervix has been amputated or repaired, are exaggerated, irritating, and sometimes infectious. The protection afforded by this flap of mucous membrane dissected from the posterior vaginal wall is especially valuable in repairs of old tears of the perineum made shortly after the uterus has emptied by labor at term or by an abortion. These old tears of the posterior vaginal wall heal remarkably well after repair done at this time if the precaution be taken to protect the sutures from drainage from the uterus. Care must be taken, however, in the dissection of the posterior wall of the vagina to avoid injury to the engorged veins between the vagina and the rectum. We have to report one death due to embolus, caused by injury to one of these veins, during a repair of an old tear of the posterior vaginal wall, in a woman who had aborted three days previously.

The objection has been made that the conservation of the posterior vaginal wall makes it impossible to suture together the fascia and fibers of the levator muscle at the requisite height from the outlet of the vagina. This we have found not to be true, having had no trouble in suturing the levator muscle at a height of from two to three inches from the outlet of the vagina, the posterior vaginal wall being kept clear of the field by traction upon a clamp or thumb forceps attached to its free border.

In the repair of the first twenty-two cases, interrupted sutures of No. 2 chromic catgut were used in bringing together the fascia and fibers of the levator muscle. The skin was also brought together with interrupted sutures of No. 2 chromic catgut. The results were not satisfactory, mild infections and sloughing being of frequent occurrence. These repairs were done during the year 1911.

During the year 1912 a continuous suture of No. 2 chromic catgut was employed in bringing together the muscle and fascia, and also the skin, the skin being brought together with a subcuticular stitch using the same strand of catgut throughout. During this year, (1912) 37 cases were operated upon by this method, the results were better, but difficulty was experienced in burying the last knot of the suture, and at this point healing was frequently by granulation. To overcome this difficulty of burying the last knot of the chromic catgut, and so sealing the buried catgut from infection, the experiment was made of bringing together the skin over the knot in the chromic catgut by means of a Mitcheln clip. The result was satisfactory, the knot was buried, and the troublesome granular healing at this point ended. The clip was removed at the end of seven days. The effectiveness and simplicity of the Mitcheln clip in sealing the wound at this point caused the decision to entirely seal the skin wound of the repair with the Mitcheln clips, using from four to six for this purpose, the catgut sutures within the vagina being also protected by the flap of mucous membrane dissected from its posterior wall.

In the next 81 cases of repair of the posterior wall of the vagina, *i. e.*, those cases repaired from Jan. 1, 1912, to Aug. 15, 1913, a continuous suture of No. 2 chromic catgut was used in bringing together the fascia and fibers of the levator muscle, and the superficial fascia lying just beneath the skin. A large sized Hagadorn needle was used for suturing. The skin was brought together by Mitcheln clips. Difficulty was frequently experienced in bringing together the skin surfaces over the sutured muscle. This was particularly the case in relaxations of the posterior vaginal wall in women who had never borne children. To overcome this difficulty, the skin was dissected free for a distance of one-eighth of an inch from the underlying tissues after the suturing had been completed. No difficulty was now experienced in bringing together the skin with the Mitcheln clips, and the dissection also relieved the tension of the skin with its attendant pain subsequent to the operation.

We have repaired the posterior wall of the vagina 185 times from Aug. 15, 1913, to Dec. 1, 1914. The repairs healed quickly and generally without infection, but in a rather too large proportion of the cases the healing was accompanied with pain caused by the pointed ends of the Mitcheln clips piercing the delicate skin between the posterior commisure of the vestibule of the vagina and the anus, and in several cases infection gained entrance to the repair through apertures in the skin caused by the pointed ends of the Mitcheln clips. Then again the removal of the clips was often painful, due to the same cause. To overcome this difficulty we have of late cut off the pointed ends of the clips with a pair of scissors. The clips with their ends blunted hold firmly, do not puncture the skin, and so do not cause pain or infection and their removal is easily accomplished with the aid of a hemostat.

The posterior vaginal wall was formerly dissected from the rectum in the median line and from the strata of muscle fiber and fascia on either side, and after the muscle had been brought snugly together with chromic catgut, the flap of mucous membrane was allowed to remain free from sutures. The objection to this was that frequently a dead space formed at the point of junction, between the mid portion of the mucous membrane flap, as its lower border, and the upper angle of the skin flaps where they were brought together with the Mitcheln clip. After the removal of the clips, the wound at this point would sometimes open and subsequently heal slowly by granulation. To overcome this unpleasant complication, the mucous membrane flap dissected from the posterior wall of the vagina is now carefully replaced over the repaired muscle and stitched to it with No. 2 chromic catgut.

It has been our practice to postpone the repair of fresh tears and also the repair of old tears and relaxations of the posterior wall of the vagina until at least three days of the puerperium have passed. The only exception to this rule, is in case of hemorrhage due to lacerations during labor; in these cases an immediate repair is made. In the repair of fresh tears of the posterior vaginal wall, the mucous membrane lining the wall is dissected free from the muscle, for a distance of from one-half to one inch above the upper angle of the tear in the mucous membrane. The reason for this is two-fold, first to suture firmly together the levator muscle which is frequently torn or separated at a higher level than is the tear in the mucous membrane, and secondly to allow the draping of the mucous membrane flap well over the repaired muscle. After the dissection tears in the mucous membrane flap are repaired by submucus sutures of No. 2 chromic catgut. The technique of the operation after this is identical with the technique of old tear of the posterior wall of the vagina.

After the repair of the posterior vaginal wall, the patient is encouraged in all cases to assume the Sims position, at frequent intervals, during the time she is confined to her bed. This position favors drainage of uterine and vaginal secretions which may have accumulated above and behind the repair of the posterior vaginal wall.

During the past three years all repairs of the vagina have been allowed to heal without the irritation and possible infection incident to the use of vulva pads.

To recapitulate:

The field of operation and the skin surfaces about the entrance to the vagina are painted with a fifty per cent solution in alcohol of the tincture of iodin. The mucous membrane lining the vagina and the uterus is also painted with the tincture of iodin diluted with alcohol.

The interior of the uterus is not curetted.

If there be any enlargement of the cervix, the excessive portion of it is removed.

The mucous membrane lining of the posterior wall of the vagina is dissected free from the rectum and the underlying muscles, the torn or relaxed muscular fascia and fibers are brought together with a continuous suture of No. 2 chromic catgut, and after the muscle has been repaired, the mucous membrane flap is stitched back into its place over the repaired muscle. All sutures are buried.

After the suturing has been completed, the skin is dissected free from the superficial fascia for the distance of one-eighth of an inch, and the wound sealed with from four to six Mitcheln clips. The clips are blunted by having their pointed ends removed with a pair of scissors.

Fresh tears of the outlet of the vagina are repaired preferably the third day of the puerperium.

Old tears of the posterior wall of the vagina may be repaired by this method with every assurance of success after the uterus has emptied itself either after labor at term or after an abortion.

(For discussion see page 359.)

## HEREDITY IN ALCOHOLISM.

**F. H. Barnes, M.D.**
Superintendent, Dr. Barnes' Sanitarium.
Stamford, Conn.

HEREDITY plays an important role in the history of this disease. For many years the consensus of opinion among physicians has been that the great majority of alcoholics have a neuropathic transmitted tendency to drink to excess. This does not signify that people because of said hereditary influence must needs be degenerate from the start. For in a large number of cases this is not true but sooner or later the taste for alcohol will become apparent as the latent ability to resist is lost. Many men with an acknowledged inebriate parental history limit their consumption of alcohol to a certain number of glasses a day with the mental resolve that they will never exceed such limit. It is indeed astounding in some cases that they succeed for a number of years in accomplishing this result. But time will tell and slowly but surely the habit creeps upon them. There is a comic side to the picture. The excuses given for further indulgence are often laughable even if pitiful. Just one more little drink is the slogan, it won't hurt me. I am naturally a strong man, drink will never get the better of me. But it does and strong men from a physical standpoint soon become the weakest of the weak, absolute slaves to alcohol and the vicious habits which accompany it.

This paper will treat of heredity in a dual sense. Not only the direct transmission of a desire to drink alcohol to excess but also of a transmitted neurotic inheritance to the progeny of the alcoholic parent. In many instances there is transmitted a neurotic tendency rather than a direct taste for alcohol. Such cases develop one of the psychoneuroses such as neurasthenia, anxiety neuroses or hysteria. They also suffer from epilepsy, phthisis, idiocy, imbecility and chorea. Some of this class later develop one of the psychoses. I have in mind the case of a young man, R. A., age 24, who came to me for treatment after several years of alternate work and alcoholic excess. He would sober up for a time, accept a good position and show marked ability in his occupation. Then suddenly would have a "nervous spell" as he called it. Was unable to concentrate his mind upon his work and was easily fatigued upon the slightest exertion. Suffered from insomnia for days at a time. During such periods he would walk the floor all night, fighting against, as he said, the irresistible. At last after several days spent in trying to ward off the various neurotic symptoms he would take a little alcohol "to quiet his nerves." For a year or so he controlled the amount of alcohol and took a few drinks when he was most nervous but later became decidedly inebriate and would take one drink after another until he was absolutely helpless. Under the gradual reduction plan and proper tonic treatment he would sober up and get into first-class physical condition. After a few weeks he would be able to secure a new position and be a model employee for a period of months. Then suddenly all the old neurotic side would develop and another wild orgy take place. He told me one of the hardest things for him to bear was to sit at the table and see wine served every night for dinner. He was not allowed a glass but had to watch the others take theirs. Said that often after being deprived of it in this manner would have a terrific battle to keep from going to the nearest saloon and having his fill. I suggested to his mother the wisdom of his not seeing any wine or liquor in her home to which she replied, "It is a question of personal privilege and I do not intend to give it up." Such was her reply after I had told her of the danger to her son and the distress he was subjected to while watching others drink before him. The boy's father was a pronounced alcoholic who died at an early age. The mother was typically neurotic and had been from a girl. The young man began drinking heavily at the age of nineteen and came to me after five years of periodical drinking. After a few weeks' treatment he went home in fine physical condition resolved to make good. He secured employment but within three months had a relapse. He finally shot himself after making the remark that his case was hopeless. He showed no desire to drink alcohol nor did he have a taste for it at an early age but for years was a neurotic; suffered from severe headaches during his boyhood; was constipated, had frequent attacks of indigestion, slept poorly at night, was decidedly anemic; when exercising with his playmates was easily fatigued, had palpitation and at times a feeling of pain about the heart. He did not take his first drink until after he was eighteen years old and then only at the suggestion that it would act as a sedative to his neurotic tendency. For a period of nearly a year he was able to take occasional drinks without acquiring the habit. He then suddenly lost control and proved a drinker of the worst type. Had this boy been placed in a different environment and given proper hygienic treatment he might never have acquired the alcoholic habit. This is only one of the many who do not suffer from having a direct desire for alcohol but are the victims of a morbid heredity. I wish to cite another case that was typically neurotic from an early age. W. E., age 37 years. Paternal grandfather alcoholic, four uncles drank heavily. Father died of insanity, result of alcoholic excess. Patient always of a nervous and excitable temperament; worried greatly about all the little details of business and family affairs; easily depressed and subject to morbid fears about his future. Although a neurasthenic from boyhood he did not drink alcohol in any form until after he was thirty-five years of age. He suffered greatly from insomnia and was advised to take liquor to help him sleep. He was soon drinking a quart of whiskey each night and shortly became a physical wreck, at which time he was sent to me. After a few weeks' treatment he left in good physical condition and is getting on nicely at the present time. Both these patients deny any acquired taste for alcohol. Both insist they hated the taste of liquor and had no great desire for any stimulant, but simply took it to quiet their intense neurotic symptoms after being instructed to do so. Many of these patients acquire the drug habit simply because they want something which will act as a sedative to quiet their nerves or give them proper sleep. The majority of alcoholics, however, suffer from a craving for stimulants of some sort from the start, thereby differing from the neurotic type. Some of them, as I have before mentioned, are able to control their desire for alcohol by a systematic method of drinking, limiting its use to a certain number of drinks each day. This accounts for a very small proportion, as the larger number simply drink their limit within a short time after their first drink. I have in mind a boy, R. T., age 17. Father alcoholic. First started to drink during his fourteenth year. Began by sampling the wine left in glasses after dinner was served. From almost the first taste he formed the habit. At every opportunity he took a drink and a little later at the age of fifteen was a pronounced alcoholic. During his seventeenth year he was found by his relatives at different times in a state of drunken stupor and they were compelled to have him watched continually. An attendant was employed for this purpose, but had little or no control of the lad. He was always able by lying or subterfuge to get liquor in some manner. Every time he could get hold of money he would buy whiskey. He was typically degenerate and said that he always possessed a love for strong drink. Finally after months of debauchery he was sent to me for treatment. He remained under restraint for about six months and was sent home in splendid physical condition. Since his discharge I have not been able to get any information as to his life and conduct. Another case has come under my observation: B. C., age 32. Father alcoholic, mother neurotic. Had been drinking steadily since he was seventeen years of age. For the past eight years had been in hospitals and sanitariums three-fourths of the time. He has an uncontrollable desire for drink which existed since boyhood. As soon as he gets the opportunity he drinks until he is intoxicated and remains in a drunken stupor until he is forced to go to an institution for treatment. Loves to tell all the details of his debauched condition. Has reveled in all forms of sexual perversion and abuse. His brother is also addicted to alcohol and they often go on sprees in company. Thinks of nothing when he is restrained but drink, in fact, talks of nothing else. His main interest in life is to get strong enough after a drunk, as he terms it, to begin another one. Has no desire to be cured and when told the dangers attendant to his future, laughs it off and says he will take his medicine when the time comes. Hundreds of such cases are sent every year to the various hospitals and sanitaria and the number is ever growing larger. "Like father like son," is the old adage, and never is it more true than in the child of the alcoholic parent. Born with a natural appetite and craving for strong drink, their one ambition is to find the stimulant which satisfies such craving. In some of these cases it is true the excuse of alcoholic heredity is given as a license for drunkenness and degeneracy. I have heard many of them say, "My father was a drunkard, I know I will die from drink," at the same time not making a single effort to control the desire for alcohol. We have all seen examples of men and women rising above their heredity and winning the fight against the terrific desire for strong drink. Nevertheless, the battle is a hard one and we must be very charitable in our judgment of those who inherit a greatly weakened power of resistance. It is apparent that either a transmitted desire for liquor or a neurotic inheritance are both destructive to the individual. The neurotic side leads to mental instability and physical weakness which often leaves the victim an easy prey to bodily disease or weakens his ability to fight the battle of life on an equal footing with his fellows. McBride in his book, "The Modern Treatment of Alcoholism and Drug Narcotism," says "Alcoholism in parents does not always show itself in the one way in their offspring." "It may break out in one or more members of the family as alcoholism or there may be a history of alcoholism in one member and various neurotic troubles in others." Kerr in his book on inebriety states that defective nerve power, enfeebled will and a debilitated morale form a favorite legacy from thoughtless inebriates to the helpless insane. Some of the circle, generally the daughters, may be nervous and hysterical; others, generally the sons, are apt to be feeble and eccentric and to fall into insanity when any emergency calls for the display of unusual brain power. In one household with a drunken father, two girls were hysterical and the third was an imbecile. Of the sons, the oldest was epileptic, the second died of alcoholic epilepsy and the third was an idiot. In another family burdened with the hereditary drink transmission, the eldest daughter committed suicide, the second lost her reason and became quite demented and the younger son had hysteria. The elder son killed himself by poison through drink and the younger is apparently a confirmed sot. Crothers writes the following in his work in inebriety: "Children of inebriates often exhibit a special neurotic temperament in irritability, hypersensitiveness and unusual prostration from any particular exertion." "Not infrequently such children exhibit precocity and unusual mental development, which after a time declines and leaves physical and mental feebleness." "The fact is established beyond all question that alcoholic parents cannot transmit normal vigor and health to their children." "All such descendants exhibit feebleness in resisting disease, less strength, lower vitality and greater difficulty in adapting themselves to the exacting conditions of life." "In epidemics and infectious diseases such children have greater mortality." The gentlemen I have quoted, after years of experience in the treatment of the alcoholic, recognize the neurotic taint in the children of the inebriate. We must be quick to note it in the child and parents must be taught by the Medical Fraternity the danger of such conditions. Without careful hygienic or medical treatment they surely will the more easily fall a prey to disease or become degenerate.

It is not within the province of this paper to discuss the treatment of alcoholism and I shall not attempt to do so. The children of the inebriate are ever in our midst and to a degree constitute a menace to the development of a strong aggressive race. We should wake up to the fact that these unfortunates must receive proper training from childhood. The family physician alone is powerless to do this but with the co-operation of parents and relatives much can be accomplished in warding off the results of congenital defect and increasing the ability of the individual to resist the craving for alcohol.

## CONGENITAL CYSTIC KIDNEYS. REPORT OF A CASE CAUSING DYSTOCIA AND DEATH OF INFANT.

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Brooklyn-New York.

SURGEONS frequently meet with congenital cystic kidneys which have not interfered with the mature development of the individual; and doubtless moderate congenital cystic kidneys are frequently overlooked by obstetricians. Occasionally, however, the condition is so extreme as to cause dystocia and death of the fetus from interference with respiration. The condition is casually mentioned in text books. It has seemed to me of sufficient clinical and pathological interest to present for your consideration the following case report with specimen.

Mrs. 22596, Jewish Hospital, a private patient, had a normal pregnancy. She went into labor at term. The fetal heart sounds were normal and there was no polyhydramnios. She had a prolonged first stage with a breech presentation. Labor was completed by manual dilation of a thoroughly thinned and softened cervix, and by breech extraction. Considerable difficulty was experienced in drawing the torso of the child through an ample pelvis but was accomplished without evisceration. After birth the child made ineffectual effort at respiration and died. Examination showed the abdomen very greatly distended by a large tumor in each lumbar region, which interfered completely with the action of the diaphragm. The clinical diagnosis was tumor of the kidneys.

The autopsy report of Mr. Blatteis was as follows:

### Description of Cystic Kidneys.

Size and weight.—Right kidney, 140 grams, 112-75-38 millimeters. Left kidney.—150 grams, 100-62-38 millimeters.

The pathology of both organs is identical. The capsules strip easily. The stellate veins do not show. There are numerous subcapsular hemorrhages. Both kidneys are very pale in color. Their consistency is pulpy (they give a fluid feel). On section the first impression is that the tissues are waterlogged (edematous). There are visible over the entire cut surface minute spaces about the size of millet seeds. The cortex is thin and the markings are very distinct, but not normal, the color being very pale.

In the medulla the same appearance prevails. The differentiation between the cortex and the medullary rays cannot be made. The blood vessels cannot be made out.

The pelvis is normal and empty and not dilated. On cutting the specimen and squeezing the parenchyma of the kidney fluid was expressed, yellowish in color and of urinous odor.

Histologically, the capsule is much thickened and less dense than normal. Immediately beneath the capsule there are here and there hemorrhagic extravasations. The malpighian bodies are fewer than normal. They are imbedded in broad bands of fibrous tissue. Very few cross sections of convoluted tubules are present. There are present in all portions of the kidneys small and large spaces which from the character of the epithelial lining are portions of the uriniferous tubules. These spaces are fewer and smaller in the cortex and more numerous and wider in the medulla. They are entirely absent in the papillary portion. The type of epithelium lining all these spaces is cuboidal. These spaces are empty except for the presence of exfoliated epithelium.

Between the dilated spaces are broad bands of fibrous tissue containing blood vessels and collections of epithelial cells suggesting incomplete uriniferous tubules.

The amount of connective tissue increases markedly as one approaches the papillæ. The lumina of the collecting tubules are narrower than normal and they are markedly diminished in number.

The cause of this condition has been the subject of much debate among pathologists.

Virchow regarded it as due to fetal inflammation affecting the medulla and leading to constriction and atrophy of the terminal portions of the collecting tubules. Others considered the condition adenomatous. The consensus of opinion at the present moment is that we deal with a condition of arrested development. (Adam's Principles of Pathology.)

Herring, Schinn, and Carl Huber, of the University of Michigan, have conducted the most careful and thorough study of the development of the uriniferous tubules. It is the result of their investigations which has led to the now general opinion that the secreting tubules arise from the nephrogenic blastema while the collecting tubules are formed by a continuous process of budding from the primary pelvis of the kidney. It is the failure of these two portions to unite, with the consequent retention of the secretion and dilation of the secreting tubules which results in this pathological condition. (G. Carl Huber, *American Journal of Anatomy,* Supplement to Vol. IV.)

# EDITORIAL

## TYPHOID.

AS the season for enteric diseases advances when cases of typhoid begin to appear, the problems surrounding the prevention and limitation of these controllable diseases should receive the keenest attention on the part of the profession and the public alike.

An extremely interesting and valuable discussion of the subject appears in the monthly bulletin of the New York City Department of Health for April, by Dr. M. L. Ogan. This report of the observations made during the past three years upon the incidence of typhoid fever in New York City by the Bureau of Preventable Diseases, emphasizes in no uncertain way the failure to appreciate the value of typhoid immunization. It is extremely significant that from January 1, 1913, to December 31, 1914, the medical inspectors of the Health Department had immunized but 2,969 persons. There is no way to determine the number immunized by physicians in private, but the total number cannot be large. The experience of the U. S. Army on the Mexican frontier amply justifies the belief that with proper attention to this prophylactic measure, typhoid fever could be rapidly eliminated, instead of which there were 2,260 cases of typhoid fever reported in New York City during 1914 besides an appreciable number that have never been recorded. It is to be feared that physicians as a class are not sufficiently impressed with the importance of immunization; they owe it to themselves to advocate the measure and to insist upon it as a rational means of conquering a disease that has so far proven refractory to treatment. Their failure to do so places upon them the responsibility for its continued ravages. The time is not far distant when the initiative will probably be taken by the Health Department and immunization against typhoid will be made compulsory. The medical profession should stand as pioneers and not followers.

It is gratifying to read of the improvements that have taken place in the purity of the milk supply, in the greater cleanliness of oysters and other food products and especially the excellent condition of the city water supply. Dr. Ogan has been at some pains to show that flies have probably not been to blame for definite outbreaks of epidemics. He details at some length the epidemics due to carriers and explains the laudable efforts that have been made by the Health Department to control the activities of some known carriers, and the means which have been taken to prevent their employment as food handlers. The Department announces its intention to require fecal examinations hereafter in discharging convalescents of all classes irrespective of occupation. One year after physicians will be expected to submit blood from each case for the Widal reaction.

The wide distribution of Dr. Ogan's article will undoubtedly serve a most useful purpose in stimulating co-operation and increasing the effectiveness of the crusade against typhoid. H. G. W.

## THE CALORIC RESTAURANT.

AMONG the innovations of the Commissioner of Health of New York City, possibly none is quite so startling as the restaurant conducted primarily for the employees of the Department where the bill of fare gives not only the moderate charge for the various articles it offers, but their caloric value as well. It has been suggested by one commentator that all one need to do is to pick out the necessary number of calories and have the waiter bring him whatever article measures up to his caloric need without reference to its appetizing qualities. There has always been some question as to the wisdom of presenting to the public material that is beyond the scope of their common training. One may be pardoned the lurking suspicion that there are physicians—only a few let it be hoped—to whom a calory is almost as unfamiliar as the fourth dimension. Indeed if one but considers the contradictory and illogical advice as to diet offered by many physicians to their patients and the mediaeval superstitions regarding meat soups and red and white meats that are still common fetishes, it may well be asked whether Commissioner Goldwater might not have done better to have worked up to calories a little more slowly. There is gradually but surely growing a conviction that a limited protein diet is advisable for most people while for many a protein free diet is essential. In any event the balance of food value is generally neglected. It is unquestionably true that very few, physicians included, have any rational conception of what constitutes a balanced diet and in so far as the caloric value of individual dishes and portions can instruct the uninitiated, it may help to spread the gospel of rational eating, but the human tendency to seize upon a published fact and generalize it is so great that it will probably be several generations before the restauranteur and the housewife learn to apply the principle of balanced feeding in a rational and sensible way.

H. G. W.

## ALCOHOL.

WE once met a gentleman from Virginia, a medical man in the Army, who gave the solemn assurance based upon prolonged experience that the harm of drinking came from not drinking right. He asserted with evident sincerity that after many years of moderate drinking he was as good as ever, and promised to prove it. His method was to avoid all alcohol until late in the afternoon after he had digested his hearty meal and then to indulge as freely as occasion required. He had never been intoxicated. He was evidently sincere and immensely irritated at the idea of enforced prohibition; and he looked healthy.

It is probably true that there are many such people throughout the land; moral, upright and convinced that the harm of drink is over-estimated. The influence of such an example as the one just cited, the honest conviction of a medical officer of assured standing, is one of the many stumbling blocks in the way of rational appreciation of the actual harm of alcohol as a beverage. While those who know, probably class him with those centenarians who are advertised as having prolonged their lives by a judicious use of a certain malt whiskey, the fact that a medical officer refuses to accept the teaching of modern physiology shows how difficult is the problem that rational prohibition has to solve.

As against this individual experience, it is, however, a matter of common knowledge that apart from any ultimate degenerative process, alcohol in very moderate amount acts upon certain persons as a violent intoxicant, even in very small amounts, and paves the way for other diseases that are readily contracted during the intoxicated state. With this knowledge physicians should stand as a unit for any measures that will serve to control the distribution of alcohol as a beverage even though they may as individuals feel some question as to the wisest method by which this may be brought about. The spread of venereal diseases is in no small degree directly due to alcoholic excess and this fact alone warrants the strongest curb that may be placed upon general drinking, when one considers the appalling spread of this single class of human disease. The physician need not consider the economic side, nor the moral or social aspects of alcohol; he may even lay aside the question of degenerative diseases, such as arteriosclerosis which is generally attributed to alcohol, though denied by some; he knows from his own experience the harm which does come from alcohol and should do what he can to control its use. H. G. W.

## OBSERVATION.

PERHAPS no single faculty is so essential to success in the practice of medicine as the power of orderly observation, the capacity for which, inherent in a few, may be developed at will. The brilliant clinician is not always that one who seems to possess an intuitive insight. The ability to observe, systematize ones observations, collate them and recall them at will is in many the result of plodding, dogged determination to develop an orderly method of thought that in time results in masterly insight. One cannot forget the method urged upon his pupils by a former instructor in one of the best of American medical colleges, himself a plodder, but a capable teacher because of his insistent application. He constantly reiterated the imperative need for orderly observation, insisted that each patient must be analysed from head to feet, always in the same order, and advised his pupils to train themselves in the habit of observation by making it their practice to glance about each room as they entered it, noting the color and pattern of the wall paper, the nature and arrangement of the furniture and pictures, the carpet, windows, lighting—everything that the eye might register with its proportions and topography—and then to reconstruct it from memory, taking the first opportunity to correct and check the picture; and to do it again and again. It is surprising how rapidly the repetition of this simple method grows into a habit, and how its orderly repetition develops ease and accuracy in clinical study. It soon becomes intuitive to gather, almost at a glance, the salient features of any case. The labor of systematic study becomes easy, almost automatic. The mind is left free to focus upon the unusual aspects that leap, as it were, into prominence. This method also trains the memory unconsciously so that the effort to recall symptom groups is minimized. Just as the machinist acquires manual dexterity and precision in muscular coordination by the constant repetition of his daily task at the lathe, so celerity of thought and precision in judgment accrue without conscious effort from the habitual exercise of the habit of observation. Just as the moral attributes, by-their regular repetition result in wholesome living and, conversely, the moral acts growing easier with habit, build up and round out strength of character, so does the habit of observation grow stronger with constant use. On the other hand, failure to constantly employ systematic observation results in slipshod work. Failure to recognize the true nature of disease is as often the result of inattention as of ignorance and such a slip can never be compensated by frequent brilliant "snapshot" diagnoses. Pardonable blunders are frequent enough without adding to them the humiliating failures due to inattention.

"If we slip, though we win, in the race,
The hoof mark is scarred on the course.
Though Heaven and Earth pardon sin,
Remaineth forever remorse."

"Watch Father during the 'Long Prayer,'" said the dominie's son. "He bought an automobile last week, and he always prays for his personal troubles." It may be that the foregoing sermon springs largely from editorial failures, but it is in no small measure called forth by a very evident present tendency to throw upon the clinical laboratory the burden of diagnosis.

It must never be forgotten that from the time of Hippocrates—yes, from the beginning of the human race, which is coeval with the science of medicine—down to a hundred years ago every gain in medical knowledge was the result of careful, painstaking, *repeated* clinical observation of men who had trained themselves to *see*. What can be more inspiring than the story of Semmelweis? In 1847 he saw that the reason for the great excess of puerperal septicemia in Ward One of the Vienna General Hospital was the dirty hands of students who went there directly from the dissecting room. He saw the autopsy on one of his colleagues who died from a dissection wound, recognized the identity of the infection and instituted a preliminary course of soap and water with chloride of lime. During the next year puerperal sepsis in his ward fell from 9.92 per cent to 1.27 per cent. Independently, in Boston, Oliver Wendell Holmes had made the same observation and, incidentally, was met with the same storm of opposition. Both these pioneers in obstetric cleanliness had only their unaided senses as guides to their discovery. It remained for Pasteur and Koch to elaborate the causes and open the way for laboratory verification.

As time advances the laboratory will be brought closer and closer to the patient and co-operation between the physician and the pathologist will become far more intimate, but there will always be, until "men are built like angels," the urgent, daily need for bedside diagnosis, and with the spread of knowledge among the people there will grow a more pressing need for greater skill in the physician. The medical school will provide his foundation, the hospital (and a hospital training will soon be obligatory for all) will round out the college, but his personal ability to read disease will be the *sine qua non* by which the physician will be judged, and that he can and must develop for himself, and nothing will help more fruitfully than the habit of methodical observation. H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

*Regular meeting of the Brooklyn Surgical Society, held at the building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, Dec. 3rd, 1914, at 8:30 p. m.*

The President, James C. Kennedy, M.D., in the Chair.

*Program.*

Case Reports:
1. (*a*) Complete severance of the Urethra just external to Vesical Sphincter. Patient.
    (*b*) Recurrent Vaginal Fibroid Polypi in a Child. Specimen.
    (*c*) Carcinoma of the Cervix Uteri secondary to Fibroid of the Cervix. Hysterectomy.
    (*d*) Inguinal Hernia in a Child containing entire Cecum.
    (*e*) Simple Colles' fracture and Compound Fracture of the Patella. Satisfactory result.
    E. W. Skelton, M.D.
2. Report of case of Osteomyelitis of Tibia. Radiographs.
    O. A. Gordon, M.D.
    Explanation of Radiographs in above case by J. G. Williams, M.D.
    Discussion by Dr. E. W. Skelton and Dr. O. A. Gordon.
3. (*a*) Acute Gangrenous Appendicitis—Subhepatic. Radiograph.
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    Discussion of case (*a*) by Dr. R. H. Fowler, Dr. G. I. Miller and Dr. Chas. A. Anderson.
    Discussion of case (*b*) by Dr. G. I. Miller and Dr. Chas. A. Anderson.
    By invitation, Dr. W. B. Chase reported cases representing the results of Radium Therapy for Malignant Diseases as follows:
        Epithelioma of the Hand. Patient.
        Sarcoma of the Thigh. Patient.
        Adenosarcoma of the Rectum.
    Discussion by Dr. P. M. Pilcher, Dr. Mathias Figeuira and Dr. W. B. Chase.

Paper of the Evening:
"The Treatment of Heart Wounds, with report of one case. Radiographs.
John H. Long, M.D.
Discussion by Dr. Mathias Figeuira and Dr. John H. Long.

### Complete Severance of the Urethra Just External to the Vesical Sphincter. Patient.

*E. W. Skelton, M.D.*

I want to report a case that I made a preliminary report on in the June, 1913, number of the Association Journal, if I remember correcly. It is the case of a boy who had been run over by a heavy motor truck in November, 1912, sustaining a fracture of both rami of the pubis and a complete severance of the urethra just external to the vesical sphincter. I operated on the boy in the Norwegian Hospital on the day of the accident and he was in the hospital until the following May. He had a rather stormy convalescence during the time that he was in the hospital, but left recovered, and I have not seen the boy personally from that time until this evening when I saw him downstairs. I hunted up the case last week and saw the mother and asked her concerning the boy's symptoms. He is able to pass his urine through the natural channel at the present time. When he was in the hospital the nurse who was in charge of the case was very careful to have him void his urine every three hours and he was able to control his urine for that length of time. His mother told me last Thursday when I called at her home, that he could retain the urine during the night, but that during the day time he was incontinent. Today when I stopped at her home on the way back from the hospital, she told me that he is not only incontinent during the day time, but also in the night time. I do not know the condition of the urethra as I have not seen the boy in such a long time. At the time that he was in the hospital we were passing sounds regularly and if I remember correctly, he took as high as a No. 12 sound, but what has been done since then I know not. I simply present him as a case in which the urethra was attached to the bladder and the boy is able to pass his urine in the natural channels. I think that it is a personal equation of the boy's that he does not control his urine inasmuch as when he was in the hospital he was able to control it.

The treatment was described in the Journal. I will give it to you roughly. The case was brought in with simply a history of the accident. The boy himself was not able to tell us much about it. The ambulance surgeon told us more. The accident happened about 4:00 or 5:00 o'clock in the afternoon and I was not called until 9:00 or 10:00 in the evening. When I examined him he had a large mass on the left side, which was distinctly palpable and dull to percussion. I passed a catheter through the meatus, but could not enter into the bladder at all, the catheter simply passing a little blood as it came back. I then opened the abdomen and went in from above to find that this mass on the left side was the bladder detached from the urethra with the sphincter still intact and the bladder quite well filled with urine. The next thing that I did was to do an external urethrotomy and pass a sound through the posterior urethra up into the pelvis. I then (having identified the urethra) withdrew the sound and passed a rubber catheter and opened in the bladder in what would have been the space of Retzius, and passed a sound down through from the bladder through the sphincter into the pelvic cavity and then tied a piece of silk on to the end of the sound on to the proximal end of the rubber catheter and drew it back into the bladder and so voided the urine through from the posterior opening and relieved the tension that there was on the bladder. I simply crowded the bladder down into its normal position and sewed the lower part of the wound up and drained on both sides of the catheter in situ.

The boy had a rather stormy convalescence. An abscess formed at the site of the abdominal incision and I believe Dr. Delatour opened that when I was off service, but aside from that he went through a normal course. The two parts simply came together and remained there. As far as possible we kept the catheter in the bladder continuously and kept the bladder pushed down as far as possible to the line of the former attachment.

## Osteomyelitis of the Tibia. Radiographs.

*O. A. Gordon, M.D.*

The case I wish to report is that of a young girl, 13 years of age, who came into my service in December, 1912, suffering from osteomyelitis of the tibia. Her trouble dated from a contusion of the leg in October of the same year. The leg was much swollen and inflamed with several discharging sinuses.

On December 16th, about three or four days after coming into the hospital, I removed with a curette about two-thirds of the tibia, the necrosed part of the bone, and brought the periosteum together in the shape of a column, hoping for regeneration of the bone, put the leg in a plaster cast with a window and then we waited for some little time and the X-ray will show what nature did in the way of regeneration, which was very little.

On July 10th, after the pus had cleared up, I made a transplantation of 8 inches of bone from the other leg, and Dr. Williams, who has followed the case with me and made the radiographs, will throw the pictures on the screen.

At the conclusion of Dr. Gordon's remarks, Dr. Williams showed on the screen a series of six pictures of the condition of the bone before and after operation and explained the conditions present in each picture.

By invitation, Dr. W. B. Chase reported cases representing the results of radium therapy for malignant disease, as follows:

(1) Epithelioma of the Hand. Patient.
(2) Sarcoma of the Thigh. Patient.
(3) Adenosarcoma of the Rectum.

**Dr. E. W. Skelton**, in opening the discussion, said: "I would like to report a case which Dr. Delatour did at the Norwegian Hospital when I was house surgeon some thirteen years ago which was very similar to this. I think Dr. Goodrich was present at the operation, in which Dr. Delatour did practically the same operation as Dr. Gordon, removing the greater portion of the bone and leaving the periosteum. The man left the hospital and had an iron brace made with a ring to go around the thigh and carried the weight partly by the body. The man was gone for a good many years. Four or five years ago I was called down to the hospital to see a man with a fracture of his left leg and as soon as I looked at him I recognized Alf Anderson. It seems that the bone had entirely regenerated and was strong enough for him to work and do manual work as a longshoreman and he had the misfortune to break the leg again, or rather, he had the misfortune to break it for the first time. He got a good result in the reuniting of the fracture."

**Dr. O. A. Gordon**, in closing the discussion, said: "I have nothing to add except to say that Dr. Delatour's operation was the same as mine up to the point where he stitched the periosteum together and mine failed to regenerate in the bone. After several months' waiting we happened to have an inch of shadow which showed in the radiograph and then I thought it was hopeless to wait longer and did the transplantation."

## Acute Gangrenous Appendicitis—Subhepatic. Radiograph.

*Chas. A. Anderson, M.D.*

Patient, J. S., male, 39 years of age, driver by occupation, was brought to the Methodist-Episcopal Hospital in the ambulance on July 26th, 1914, complaining of pain across the middle of the abdomen. Entered in the service of Dr. Charles H. Goodrich.

*Family History:* Negative.

*Past History:* The patient always enjoyed good health aside from the ordinary diseases of childhood.

*Present Complaint:* Three days before admission, he was seized with sudden, severe and cramp-like pains, worse on walking, and located across the umbilical region. A few hours after the onset of the pain, the patient vomited a small amount of undigested material. He never had a similar attack. The bowels were always slightly constipated.

*Physical Examination:* The patient is a well-nourished male about 35-40 years of age; looks sick; face more or less apathetic; lies with his knees drawn up; seems to be in pain. Mouth negative aside from carious teeth. Chest well developed. Cardio-respiratory system negative. The abdomen shows marked rigidity and tenderness over the upper right rectus and epigastrium. Right iliac fossa only slightly rigid. Point of maximum tenderness two inches to the right and one inch below the umbilicus. Pulse 120. Temperature 103. Respiration 28. Haemanalysis shows leucocytes 25,000; polynuclear cells 89 per cent.

*Diagnosis:* A diagnosis was made of appendicitis with a possibility of a gall-bladder condition.

*Operation:* A three-inch right rectus incision was made with the centre opposite the line of umbilicus. On opening the peritoneum a large amount of seropurulent material gushed forth. The right iliac fossa was explored and the cecum was not located. The pelvis was next explored and the cecum was not found, but the pelvis was filled with seropurulent material. The hand was next passed upward and a mass the size of a walnut encountered, which proved to be the tip of the appendix surrounded with omentum. The incision was enlarged upward to the lower border of the ribs. The appendix was traced upward to a point just beneath the gall-bladder, then downward toward the median line of the abdomen. Its base lay about one inch above and one and one-half inches to the right of the umbilicus. The appendix was ligated and the base cauterized. The appendix was gangrenous and the tip was perforated. A cigarette drain was introduced to the base of the appendix, emerging from the upper angle of the wound, and a rubber tube with a gauze strip was introduced into the pelvis, emerging from the lower angle of the wound. The patient had a stormy convalescence for the first days. The temperature and pulse reached normal on the ninth day and remained there with fluctuations of a half to one degree. The wound drained a very large amount of purulent discharge. The cigarette drain was taken out on the fifth day and replaced by a small rubber tube. The upper tube was taken out on the fourteenth day and the lower tube on the twenty-second day. The patient's wound healed slowly, but at the end of the forty-second day he was discharged from the hospital.

The patient was examined one week ago. He says he never felt better. He looks robust. There is a ventral hernia at the point of drainage, which we hope to relieve him of at an early date.

The X-ray plate taken two days ago by Dr. Wallace shows an undescended cecum.

This is the most common of congenital malpositions of the cecum.

## Hematocolpos.

*Chas. A. Anderson, M.D.*

This is only a preliminary report. I had hoped that by this time I would have been able to make a complete report on the case, but regret that I am as yet unable to do so. However, I hope that within a year I may be able to tell you more about it.

Patient, L. S., 16 years of age, referred to our service at the Methodist-Episcopal Hospital by Dr. Walter R. Terry.

*Chief Complaint:* Severe cramps in the lower abdomen about every 28 days.

*Family History:* Negative.

*Past History:* Measles, chicken-pox, scarlet fever and pneumonia as a child.

*Present Complaint:* For the last six months the patient has had severe pain every 28 days in the region of the uterus and both iliac fossae. The patient has never menstruated. These pains lasted about two days. The first attack was not very severe, but each following attack became more severe and finally with the last attack she consulted Dr. Terry, who referred her to us for operation.

*Physical Examination:* The patient is a moderately well-nourished young lady of about 15 to 16 years of age. She seems to be in severe pain. The pains come at intervals of 10 to 15 minutes and are so severe that the patient cannot lie still. The mucous membranes are slightly pale. The cardio-respiratory system is negative. The abdomen shows no masses, rigidity or points of tenderness in the upper half, but the lower abdomen discloses a mass the size of a 4 months' pregnancy, symmetrical, hard, slightly tender, more marked on the left than on the right side. The vulva shows normal contour, but the hymen is compeltely closed. Rectal examination reveals a mass conforming in size and shape to the mass felt by abdominal examination. Immediate operation decided upon to relieve the patient of pain.

*Operation:* A one-inch vertical incision was made in the hymen; line of cleavage obtained and vaginal walls separated with some difficulty along the median line for about 2 inches. A rounded mass was found bulging into the newly-formed vagina, but no cervix was encountered. With the finger in the rectum, this mass was opened with a sharp-pointed scissors curved on the flat. The scissors spread apart and about 3 pints of material were obtained, the color and consistency of chocolate syrup. The tumor disappeared except for a mass the size of a grape fruit in the left iliac fossa. Gauze packing was placed in the vaginal opening and the patient returned to her room and placed in the Fowler position.

The morning after the operation the temperature was 103, pulse 120, respiration 26. The gauze was removed from the vagina and a small strip re-inserted. The temperature and pulse were normal on the third day; packing was removed. On the ninth day the patient was examined under an anesthetic. The opening made at the previous operation remains patent, but we are unable to locate the cervix. The fundus is palpable above; also a mass the size of a grape fruit in the left iliac fossa. Following this examination the patient developed a marked peritoneal irritation with vomiting. Pulse 110-120; temperature 101-103. Abdomen rigid. She was treated as a case of pelvic peritonitis with salines, Fowler position, digalen and strychnin. The bowels moved only by enema.

At the end of two weeks the peritoneal irritation was markedly diminished, but the patient preferred to leave the hospital. At this time the vagina would admit a glass dilator the size of a thumb, for about 3 inches, but the cervix was not palpable, nor could it be seen. The mass in the left iliac fossa had reduced to the size of a lemon, but a new mass appeared in the right iliac fossa the size of a large grape fruit.

It is to be noted that in this case there was not only an imperforate hymen, but also an obstructive diaphragm near the upper extremity of the vagina and that the blood clot was released only after this diaphragm was perforated.

Every endeavor was made to subject the patient to as little traumatism as possible, but her stormy course demonstrates what may happen when an avenue of infection opens into a collection of blood clot. Ultimately, we hope to make a thorough examination to determine whether the patient has a uterine malformation, which condition is fairly common with a hematocolpos. The patient has not yet menstruated, although it is 6 weeks since her last attack of pain. This is probably accounted for by her severe sepsis.

### Acute Gangrenous Appendicitis—Subhepatic. Radiograph.

*Chas. A. Anderson, M.D.*

Dr. R. H. Fowler, in opening the discussion, said: "I am specially interested in this case which Dr. Anderson has presented. From a study of the radiograph it appears to be one of partial non-descent of the cecum. About a year ago I presented before this society a case of complete non-descent of the cecum and I thought it might be interesting to show again the illustrations which I had made at that time. One shows the operative findings, the second the various stages of development of the intestinal canal.

"Cases of non-descent of the cecum are not of very common occurrence and a search of the literature reveals that the latest writer upon the subject was Borden, who, up to January, 1913, had found only six or eight clinically recorded cases. There have been observations reported by Treves on cadavers. He has found that complete non-descent existed in about 2 per cent and partial in about 7 per cent. There is a very interesting article by Vosburgh, 'Non-rotation of the intestine and its relation to aberrant situations of the appendix,' which is recommended to those who are interested in the subject, in the Annals of Surgery for December, 1913. This author reports a case very similar to Dr. Anderson's. The x-ray is practically identical with his. Dr. Miller has had such a case which I hope he will report."

Dr. G. I. Miller, in discussion, said: "I reported before this society about six months ago, a case of a woman about 31 years of age, on whom I operated for a condition which proved to be an absence of the ascending colon or a non-descent of the cecum. In that case a diagnosis was made of a gall-bladder condition and on opening the abdomen I found that the cecum had not descended. There was no ascending colon present and there was an appendix which was inflamed and gangrenous and was tucked under the liver. The appendix was removed in the usual manner. The patient recovered and left the hospital in two weeks."

Dr. G. I. Miller, in opening the discussion, said: "About six or seven years ago an Italian girl was brought to my office with an abdomen the size of a nine-months' pregnancy. The abdomen was hard, tense and symmetrical. She gave a history that she had never menstruated and that she had noticed a gradual enlargement of the mass which she had growing in her abdomen. My diagnosis at the time was uncertain and I imagined that she had a fibroid uterus. Vaginal examintion was impossible. It appeared as if the entire mass was in the vagina as much as in the abdomen. I took her over to the Columbus Hospital, an Italian hospital in New York, and there opened her abdomen and was confronted with a large mass, with a wall as thin as tissue paper, through which I could see only darkness, apparently nothing more than blood. I decided at the time that if I drained the uterus through from below, as the doctor properly did in this case, the walls of the uterus woud not functionate or be of any value to the woman and I decided to remove that membrane or uterus. I drained the mass and emptied about a gallon of blood. The walls of the uterus flapped together (nothing could be more like a little tobacco pouch than that was) and I removed the entire uterus. There was practically no uterus, but merely a membrane. The vagina was opened subsequently and a glass tube inserted to keep the vagina patulous. She had no vagina.

"The girl left the hospital about three weeks after the operation, had no reaction of any kind and came back to me about two years ago. She had married and found that she had no vagina. The vagina which I had opened at the time had completely closed again and I made an artificial vagina in the old style; that is, by separating the space between the bladder and rectum and keeping the space open by means of a glass rod about 1 1-2 inches in diameter. I saw the patient about a year ago and she told me that she was having marital relations without any pain and on examination I found the vagina patulous. I say in the old style of making an artificial vagina because today we make artificial vaginas out of loops of the small intestines and I have reported a case already of an artificial vagina made in that manner to this society last year."

### Epithelioma of the Hand. Patient. Sarcoma of the Thigh. Patient. Adeno-carcinoma of the Rectum.

*W. B. Chase, M.D.*

Dr. Paul M. Pilcher, in opening the discussion, said: "Dr. Chase is to be congratulated for presenting this subject in such a modest and sane way. I think that many of us who have listened to the recent addresses on radium have gone away with the impression that the men using radium had extended themselves a little too far.

"These cases of carcinoma as presented are those which are eminently fitted for radium therapy.

"It seems to me that there are two sets of cases in which radium might be used. The first are the operable cases in the very early stages in which any number of things might be done to cure the condition; that is, you have a superficial epithelioma that might be cured by the knife, might be cured by the cautery, the high frequency spark or by radium. If the patient can afford it and wants to have a painless way of having the lesion cured, radium is indicated. I think, however, that when you get past the stage where you have more or less of an extensive carcinomatous condition which may possibly and does probably involve the lymphatic channels extending out in any growth, radium, if the case is still operable, is not the method of choice and I believe that those who teach that that is so—that radium should be used in those cases—make a great mistake, for it is in those cases that they get only incomplete results. However, when you go a step further and find inoperable cases, cases of extensive sarcoma, cases such as this of the thigh, which was evidently inoperable, we do occasionally see very remarkable results, but it seems to me that the proportion of remarkable results which we obtain from the use of radium in inoperable cases of cancer are greater when treated by the knife than by radium. However, when we see cases of this type we know that occasionally radium does have a very beneficial and possibly a curative effect in these very extensive growths.

"We have had considerable experience, lasting over nearly ten years, with radium and it does act at this stage. However, if we possibly can, we will remove a carcinoma by the knife. If we have an extensive carcinoma of the prostate we remove as much as possible by the cautery or high frequency spark and after that we use radium.

"I think that the way in which Dr. Chase has presented this subject to us tonight will do far more to encourage us in the use of radium in certain cases than all of the cases presented by Dr. Kelly. I think it is absurd to say that all cases of fibroid of the uterus should be treated by radium. I think that that is an absurdity and that it turns us against radium in a great many cases and I wish to congratulate Dr. Chase again."

Dr. Mathias Figeuira, in discussion, said: "I have not had a great deal of experience with radium in these cases, but I think that in reporting cases one point should not be lost sight of and that is we should be sure of the diagnosis. We all know that there are tumors and lesions of the skin and glands that, although not malignant, present appearances that will deceive one without the help of the microscope or the Wassermann test. If these were my cases before I did anything with them I would have a Wassermann made to be sure there was no syphilitic lesion present. I am sure that I have seen cases of disease, which men with a great deal of experience pronounced malignant when they were syphilitic. I recall such a case of cancer of the tongue that was pronounced by a New York surgeon as syphilitic and it turned out to be malignant under the microscope. I think in these cases the diagnosis should be made both by the microscope and the Wassermann reaction.

"In relation to the use of radium in cases of fibroma of the uterus: I believe we are to be guided by the same rules that guide us in the use of the X-ray. Cases that from loss of blood are too weak or suffering from heart or lung disease or some other condition contra-indicating operation. Old women are the cases for radium or X-ray treatment. Also old women in which pregnancy is out of question. On the other hand in women that are not past the change and in whom an enucleation can be done, or in those that cannot afford the long time or large expense of the X-ray or radium treatment, operation is to be recommended."

Dr. W. B. Chase, in closing the discussion, said: "I am obliged to the gentlemen who have discussed my report of cases and thank Dr. Pilcher for his very kind remarks.

"This gives me the opportunity to say that I am not a believer in radium as a cure-all.

"As regards the question of large tumors and the use of radium or operation: always operation, if they are operable. There is no issue between radium and surgery. The immense amount of service that has been done by the surgical art and the increasing amount of work which is being done by it is not to be minimized, and I congratulate the medical fraternity on having a body like the Brooklyn Surgical Society, which stands as the representatives of surgical progress in this great city.

"There are cases of superficial cancer where, no doubt, it would be a choice of operation and radium. If you go a step further, it will be noticed, the profession as a whole has not come to appreciate the fact that possibly and probably the larger use of radium is as much palliative as curative. In in-operable cases what will it do? I will quote a case or two by way of illustration: A woman in New Jersey, a patient of Dr. Polak's, came under my observation a month ago with inoperable cancer of the cervix, in which the whose pelvic organs became involved and there was nothing to be done in an operative way. The only possible chance was to alleviate the pain and prolong her life. She was anemic, mildly cachectic, was bleeding some and she had been under a great deal of mental stress. After a period of two months, using 50 to 100 milligrams twice a week, the pain is almost nil, but the growth is slowly increasing. She won't get well, but the chances are that she will come to her end with a minimum of pain.

"There is a large field for radium, with which I will not take up your valuable time, but after surgery has done all it can possibly for anatomical reasons, it has power to destroy the unseen and unrecognizable cancer cells and thereby is found the basis for co-operation and reciprocity. I again express my appreciation of your courtesy on this occasion."

### Paper of the Evening: "The Treatment of Heart Wounds, With Report of One Case." (Radiographs).

(See page 321.)

*John H. Long, M.D.*

Dr. Mathias Figeuira, in opening the discussion, said: "It would be a pity to let a paper of the interest and importance and thoroughness of this one go without discussion in spite of the late hour. Dr. Long has presented a paper of great interest to all of us surgeons because none of us can tell the minute that we will be called and confronted by one of these cases in our hospital practice. In this city full of Italians fighting and stabbing one another, you can hardly tell when you will be called to find a man who has been stabbed in the heart and you cannot get out of it. You must face your duty and try to relieve the man by an operation; so a paper that brings before you in such a clear manner, the condition and means of treatment is of a great deal of importance. We all know that whatever is to be done for these cases is to be done promptly and quickly. Cases that live after being stabbed in the heart are those in which the puncture is small so that the effusion of blood into the pericardium does not take place quickly enough to compress the heart, or in which the pericardial wound is big enough to allow the flow of blood to escape into the pleura and relieve the condition of the heart. In any event, if the case is not promptly attended to, a fatal termination soon follows.

"I think that in operating in these cases a distinction is to be made between the cases in which one suspects wound of the heart but the pleura is not open and the cases in which the diagnosis of pleural involvement and heart wound are clear. In the first class of cases one should be careful in opening the pericardium not to injure the pleura, by using Kascher's or similar methods of operation. In the other class of cases Spangaro intercostal incision with retraction of the ribs and division of costal cartilages, if needed, seems to be the best. It gives ample room, is simple and can be done quickly. Intratracheal anesthesia is of course the method to be desired in these cases. It often happens that in the hurry of the moment it is not possible to use it. In this connection it is of interest to note that in the majority of cardiorrhaphies reported to the present, with many recoveries no special care was taken of the lung. The fact is also to be remembered that in many cases of heart wound in which the pleura is involved, the lung is more or less collapsed by the time the surgeon interferes."

Dr. John H. Long, in closing the discussion, said: "I am glad that Dr. Figeuira emphasized the necessity as a rule of being on hand in these cases, but I do not think that we are going to always be as lucky as in this case. The stopping of the hemorrhage gave me time to get the anesthetist to give the intratracheal anesthesia. I thought that the hemorrhage had been spontaneously averted but did not think of this mechanism.

"It seems to me that there is one fault with our hospital organization. It was luck in this case that the man lived long enough for me to get down there and take my time about going ahead with it. In Peck's case he happened to be in the hospital when the patient was brought in. It seems to me that we ought to have some man on the ground all the while. If we had an expert anesthetist to give intratracheal anesthesia that would be of great aid. If we had a surgeon to tackle most of these things right away that would be a great help. The very large proportion of the deaths is due to cases in which the hemorrhage is rapid or in which the compression is rapid, and they die before we get there. I think that we have had two cases since this man which died before we got there. One man died on the way to hospital (walking), so that was not our fault.

"I think that of head cases the same thing might be said. If we had a man on the ground to relieve the compression immediately there would be lower mortality."

### Inguinal Hernia in a Child Containing Entire Cecum.

*E. W. Skelton, M.D.*

R. C., male, aged two, was admitted to my service with the history of an irreducible right inguinal hernia. I operated on the child as promptly as possible and when the tissues were divided and the sac isolated and opened, I found its contents to be the whole of the caput ceci and about an inch of the ileum. The ring was not so tight that the constriction had effected the circulation to any extent and after warm applications for a short time the color improved and the whole mass was reduced and the regular operation for hernia completed. The child made an excellent recovery and I report the case as a matter of passing interest as to the sac contents inasmuch as I had never met a similar case.

### Simple Colles' Fracture and Compound Fracture of the Patella. Satisfactory Result.

*E. W. Skelton, M.D.*

E. C., longshoreman, was brought into the hospital by the ambulance suffering from a simple Colles' fracture of the left forearm and a compound fracture of the left patella besides many bruises and contusions, associated with which was considerable shock. The history is that of having been struck by another man, who himself had been hit by a swinging boom, both being precipitated from a vessel to the adjoining pier, a total distance of forty feet, so stated. The clothing was torn about the wounded knee and the wound filled with the black dirt found on the piers. I saw the patent shortly after the accident and had the opened joint packed with sterile gauze and the surrounding parts carefully cleansed and painted with tincture of iodine. As much as possible of the dirt in the wound was then cleansed out and the patient treated for his shock and the wound placed in a sterile dressing. On the following day the same cleansing process was gone over again and the joint was then carefully irrigated with three gallons of normal saline solution. The fracture was a direct transverse one and the skin wound made by accident had the true lower convexity that one would make in opening the part for a simple fracture of the patella. I then sewed up the torn ligament with the chromic gut suture as practiced by Dr. Delatour and had to extend the skin wound a little on both the internal and external angles in order to close in the torn capusule of the joint. The skin was then closed by interrupted sutures of silk and the part placed in a long Volkman splint. Ten days after, when I removed the silk, the joint was found to be in excellent condition and the whole left lower extremity was then placed in a plaster Paris cast. The patient was brought to the hospital on Sept. 18th and was there for fifty-nine days, all told. When the cast was removed the union was found to be perfect and I saw the patient yesterday and found him to be able to walk and use the part easily, flexion and extension being normal. He still uses a crutch, being fearful lest he fall. The extent of the torn area and the danger of infection in that joint make one fearful in the treating of such injuries. The Colles' fracture also united favorably.

## Carcinoma of the Cervix Uteri Secondary to Fibroid of the Cervix. Hysterectomy.

*E. W. Skelton, M.D.*

Mrs. M. S., aged 48, Norwegian by birth, was referred to me by Dr. Anton suffering from uterine hemorrhage and a foul discharge. She was admitted to the hospital on Aug. 1st, 1914, with the following history: Her mother died of tuberculosis at the age of 43; her father died of stomach trouble after an illness of one month's duration, but the exact nature of the trouble cannot be determined except the patient is certain that it was not cancer. She had no illness of her childhood life, maturing at the age of 17. She was perfectly regular in her menses with no discomfort at the time. She was married at 25 and has had 8 children, the oldest being 22 and the youngest 10 years. She has had only one miscarriage, and that after the last child. There have been no complications at the births of the children. The miscarriage was accidental at 3 months and the entire uterine contents came way with no further hemorrhage. She has been irregular for the past two years and has the symptoms of the menopause. She has been losing weight and looks cachetic. The membranes are pale, the teeth are poor, the tongue is coated and the breath is foul; lungs normal; heart sounds weak; abdomen flaccid with loss of elasticity. The bowels are irregular and it is difficult to force an evacuation. The urine also is voided with difficulty. The patient now complains of an irregular uterine hemorrhage and a foul discharge. She flows for eight or nine days and then stops for two days to begin over again; this has been going on since last fall. Five weeks previous she had a sharp pain in the lower abdomen and a sense of fullness in the vagina. Examination of the vagina confirmed the discharges spoken of above and also revealed a large mass which completely occupied the vagina, so that the examining finger could not pass in between the tumor and the vaginal wall. Bimanual palpation revealed the tumor extending above the inlet of the true pelvis and the impression that the lower mass was continuous with the uterus proper. Kidneys normal.

Without an anesthetic a piece of the mass was removed for examination and a laboratory diagnosis of carcinoma was made. Local treatment was given until the discharge cleared up some and then, under a general anesthetic, the entire suppurating mass, which involved the whole of the lacerated cervical opening, was removed by a thermocautery. The burned surface was then covered by a compress soaked in a saturated solution of bicarbonate of soda and was treated each day after the second day with cleansing solution and balsam of Peru gauze impregnated with naphthaline. On Sept. 12th, 1914, I did a complete hysterectomy and found that the uterus itself was not grossly involved, being almost normal in size, but, for safety sake, the entire structure was removed. Drainage was provided by the lower route and the peritoneum was closed completely over the stumps of the broad ligaments separating the vagina with its drainage from the peritoneal cavity. The peritoneum proper was then partly closed with a small drainage gauze left in in case that the vaginal discharge might have been drawn up in the removal. Every precaution had been taken to properly sterilize the vagina before the peritoneum was opened. Five days after the operation the drains were removed and the patient has made a good recovery I saw her yesterday and she looks well and has gained weight. I feel that the upper route was the only one by means of which the mass could have been removed because there was no way of determining the fact that the mass did not involve the uterus proper and, secondly, the diagnosis confirmed again on the removed organ was indication for the complete hysterectomy. The diagnosis is that of a fibroma of the cervix uteri undergoing carcinomatous degeneration. I could not find any enlarged internal glands at the time of the operation.

### Recurrent Vaginal Fibroid Polypi in a Child. Specimen.

*E. W. Skelton, M.D.*

Ella J. was admitted to the hospital on Sept. 8th, 1914, the mother stating that the child had a mass protruding from the vagina. The child is 2 years old and about eight months ago the mother first noticed the trouble. A physician twice attempted the removal by surgical means only to have a recurrence, for which the mother brought the child to the hospital for treatment. The removed specimens had been examined by the family physician, who has done some pathologic work, and he reported the tissue to be sarcomatous. On the 9th of September I removed the tissue, which I now show you. By reason of the age of the child the parts are naturally very small and it was with great difficulty that I was enabled to trace up the tissue to its point of origin. As you will see, the different parts are more or less rounded and are pedunculated, resembling somewhat a bunch of grapes; many broke off in the removal and I show only a part of the entire mass. The tissue bled very freely, which made the removal still more difficult. After I controlled the bleeding I touched the base with carbolic and neutralized with alcohol. As far as I could see, the entire mass was removed. I had the tissue examined by our own pathologist, who did not confirm the previous diagnosis of sarcoma and we then referred the tissue to Dr. Murray who carefully examined several new slides and reports it to be an oedematous fibroid. I am sorry to report the condition has recurred and I will have to devise some other means to remove it.

## BROOKLYN GYNECOLOGICAL SOCIETY.

*203rd Regular Meeting, Jan. 4th, 1915.*

THE PRESIDENT, DR. O. PAUL HUMPSTONE, in the chair.

### Brow Presentation.

DR. PFEIFFER: Brow presentations are not uncommon and yet are infrequent enough to make their occurrence a subject of report. E. K., age 24, has had two sponataneous abortions at three and two months, respectively; with a curettage after the last one. The first day of the last menstruation was Feb. 21st, 1914, quickening June 16th. Her pregnancy was uneventful except that on two occasions spotting appeared for part of a day and was treated by rest in bed and opium suppositories. The pelvic measurements were normal. On Nov. 23rd, at 10:30 p. m., she reported that the membranes had ruptured and an hour later the pains began. Examination at 2 a. m., Nov. 4th, showed the dorsal plane in the mother's right flank, small parts to the left and near the median line; palpation of the lower fetal pole was impossible because of the patient's hypersensitiveness, and this is the more regrettable as it would have shown the posture of this pole with the cephalic prominence on the same side as the dorsum—extension. The anterior shoulder was not made out but the fetal heart was heard most distinctly just to the left of the median line, below the umbilicus, a point explained by the posture as learned later. The upper fetal pole was the breach. The vaginal examination showed the membranes ruptured, cervix effaced, os two fingers dilated. In the right oblique diameter part of the sagittal suture was felt, the entire length of which with the fontanelles could not be made out because of incomplete dilatation. I supposed I was dealing with an occipito posterior. Head appeared to be engaged. Four hours later dilatation was complete and at the anterior end of the right oblique the brow was felt, with the orbits rather well up in the left anterior quadrant; it was not engaged but attempts at that time at correction failed. Under ether the head was easily displaced and fixed and as this now gave an occipito posterior on the right side the Pomeroy maneuvre was done and the position made an L. O. A. The head was then Muellerized and forced to the spines with two easy tractions of thirty seconds each brought it to the vulvar orifice. Forceps were then removed, the patient allowed to come out of the ether enough to make definite expulsive efforts, and these, aided by expressio fetus, were sufficient to deliver. A very slight laceration requiring but two external sutures resulted, instead of the extensive tear that would almost certainly have occurred had rotation with the forceps been attempted. Here was a case then, in which, with a normal pelvis, and with an estimated normal-sized passenger the dystocia was due wholly to faulty posture. Pubiotomy would have required removal to a hospital with the added risk to the fetus of a two or three-hours' wait. Version was not elected because of the eight hours previous rupture of the waters, and rectification was decided upon, leaving version as a last resort. The method of correcting the posture was then to be considered. Should extension be complete and an anterior position of the face be created or the simpler and more quickly terminated occipito posterior? The latter was selected and fortunately this was one of the seventy to eighty per cent of cases in which rectification succeeds.

Dr. Robertson: I have seen several cases of brow presentation but I have never been able to rectify the position and have had to turn. I remember one case, a woman who had had ten children and had had as far as I could learn uneventful deliveries. This complication occurred with the eleventh labor and was a difficult brow presentation, and I remembed how long I struggled in attempting to turn. I finally did a version but on extracting the child, the arms became extended above the head and one of the humeri was fractured in the delivery. It was corrected at once and no deformity was noticeable after the lapse of a few weeks.

### Failure of Interposition Operation.

Dr. Gibson: We all learn by post-operative results and perhaps, the most instructive are the cases of procidentia which return after various procedures. A woman of 53 was admitted to St. Peter's Hospital in July with a history of having been subjected to an interposition operation seven years previously. Her story up to that time is unimportant. Four years ago she passed through the menopause without any trouble. She was comfortable until March, four months before entering the hospital, when she began to have pain in the pelvis, bearing down sensations and vesical tenesmus. Vaginal examination showed a marked cystocele which was coming over a fairly well repaired perineum. This cystocele contained the fundus of the uterus which was covered only by the vaginal wall. A catheter showed that the bladder was resting on the superior surface of the uterus. The cervix was in normal relation to the pelvis; the uterus was in exaggerated anteflexion, enlarged and very tender. The question was, whether to do a vaginal hysterectomy with application of the broad ligaments under the bladder, or to do an abdominal hysterectomy with an attempt to hold the stump of the cervix up by suturing in the round and utero-sacral ligaments. I did the later proceedure but had considerable difficulty in dissecting the bladder from the back of the uterus. The base of the bladder was replaced on the anterior vaginal wall and the vagina straightened by swinging the cervix high in the pelvis by suturing in the ligaments and covering the whole with peritoneum. This case was one where the former operator had done an interposition operation without proper selection. The uterus was too big at the time of operation and probably increased in size as a result of the distortion of the pelvic veins.

### Impacted Head in Breech Delivery.

Dr. Mayne: I wish to report a case which I saw about four weeks ago. I was called to assist a physician who was attending a woman in labor. She was a large, fleshy primapara and had been in labor about thirty-six hours. The feet and body of the child were delivered but the cervix had closed down around the neck preventing delivery of the head. The tissues of the neck, with the exception of the skin, had been separated by the traction that had been made to pull the head through the cervix, and the cervix was so contracted that it was impossible to put the forceps on. The anaesthetic was pushed and after prolonged effort I got my hand up through the os and found the head quite large. I then put forceps on the retained head; the body of the child was removed by severing the skin of the neck and I succeeded in getting a long uterine dressing forcep up through the spinal canal into the cranial cavity. By pressure on the head with the forceps, I was able to bring out about six ounces of brain tissue, and finally succeeded in reducing the size of the head so that I could extract it. It was difficult and interesting. The mother made a good recovery.

### "Tuberculosis and Pregnancy; A Resume of the Literature from 1904 to 1915.

*Dr. J. O. Polak and Dr. H. B. Matthews. Abstract.*

Dr. Matthews: Volumes have been written upon all phases of the tuberculosis question but practically nothing has been actually done for the unfortunate gravida who has pulmonary tuberculosis.

According to Bacon, of Chicago, 25 to 29 per cent of all women in the child-bearing age, *i. e.*, between 15 and 50 years, die of pulmonary tuberculosis. This would indicate that each year there are between 22,000 and 44,000 gravidae in the United States, who have active pulmonary tuberculosis in one of the three stages. Furthermore, these statistics point to the need of sanitoria for the care of pregnant tuberculous women, for guidance through the pregnancy, scientific supervision of the labor and puerperium, with proper care of the child. Institutions, therefore, that are available for all classes, rich and poor, should be provided and maintained by the state or municipality for the exclusive use of pregnant women who have tuberculosis.

After a careful survey of the literature on this subject for the past ten years, the following conclusions may be formulated:

(1) There has been an enormous amount of work done on this subject—mostly by German, French, Italian and American investigators.

(2) There seems to be no uniform methods for determining the stage nor the activity of pulmonary tuberculosis.

(3) The effect of tuberculosis upon pregnancy *per se* is practically nil.

(4) The effects of pregnancy upon all forms of pulmonary tuberculosis is distinctly bad.

(5) The effect of pregnancy upon laryngeal tuberculosis is decidedly more unfavorable than upon pulmonary tuberculosis, the mortality being 86 to 90 per cent.

(6) The transmission of tuberculosis from mother to child *in utero* is perfectly possible and does occur.

(7) The offspring of tuberculous women are generally "weaklings and display a strumous diathesis."

(8) When the mother is known to have pulmonary tuberculosis, nursing should never be permitted.

(9) Marriage should be discouraged if either party has pulmonary tuberculosis. If such advice is not taken or if already married, methods for the prevention of conception should be employed.

(10) Sterilization, preferably by the temporary operation, should be done in all active cases of pulmonary tuberculosis. This operation offers (1) the only sure means of preventing conception; and (2) the only chance of re-establishing the generative cycle.

(11) Treatment must be directed towards (1) the pulmonary lesion; and (2) the scientific management of the pregnancy, labor and puerperium—with the proper sanitorial care of the mother and child.

(12) Finally, "the whole subject is a difficult one; experiences differ; there are many opinions. To pursue the right course, doing justice to the mother, to the child and to the other members of the family, demands our most careful thought and the exercise of our keenest judgment."

Dr. Beach: Dr. Matthews has covered the entire subject in such complete detail that there is very little more to be said about it. He is to be congratulated on the tremendous amount of work done. I am frank to say that the number of cases of tuberculosis in pregnant women I have seen is small. I do not think the gravity of this condition is grasped. I was interested in the large number of babies that die during the first year. This is a phase of the subject that is not followed in our work and here the social service could be of some assistance If an obstetrician has a case that is doubtful an expert internist should be consulted.

The question of emptying the uterus, if it has to be opened, is important. In the early months, say the first and second months, the simple method of dilatation and curettage is sufficient. I used to believe that the slow method with the tampon for twenty-four hours and then emptying was the best, but I have decided that the vaginal caesarian rout is the best as it eliminates the danger of infection. Repeated tamponage for hours creates a danger of infection. Vaginal hysterectomy with spinal anesthesia would seem desirable in these cases as it would finish the proceedure in one sitting. Some authorities claim that there are as many pneumonias following spinal anesthesia as in the inhalation of ether. I would rather use the spinal method in cases of tuberculosis. Another important subject is the use of tuberculin. It would seem to offer, next to the hygienic treatment, the best possibilities in tuberculosis cases.

Dr. Polak: I wish to express my appreciation of Dr. Matthews' work. There was one point brought out which must be emphasized; it is generally considered, unless I am mistaken, that in tuberculosis complicating pregnancy, the emptying of the uterus for the effect on the tuberculous condition should be done in the early months. Consequently the remark Dr. Beach made in reference to vaginal caesarian section applies only to the later months. The great point is that it is almost impossible to dilate the cervix enough to allow the mass of a four-months' pregnancy to pass through, except with the aid of the section. If these patients are sufficiently morphinized before the spinal injection there is very little danger of pneumonia. The vomiting depends on the amount of preoperative morphine; there will be no vomiting and no lung complications if there is sufficient morphine at the start.

Dr. Matthews: I have not much to add. I wish to thank the Society for the privilege of reading the paper. I hoped some one would tell us about tuberculin and its results. The question of emptying the uterus in pregnancy complicated by tuberculosis; to do any good it must be done before the fourth month or as early as possible. If it is past the fourth month the proposition is to let it alone and let the woman take the chance at delivery.

### "A Method of Repair of the Posterior Wall of the Vagina."

*Dr. H. A. Wade.*

(See page 333.)

Dr. Baldwin: It is hard to make one operation apply to all cases of laceration of the posterior vaginal wall. I think we must adapt our operation to the injury we find, or to the disability caused by the injury, therefore, in my own experience, I do not find that any one method is sufficient to cover all cases. In ordinary cases of bi-lateral tear with a moderate amount of rectocele, the old Emmet operation still serves me best. The great aim should be to restore the parts as near as they were before the tear. Many of us fail to realize that the normal condition of the vagina is a moderate degree of rectocele. Any virgin who bears down will produce a bulging of the posterior wall and this we are apt to overlook and try to do away with it. We should also bear in mind that muscle does not give continuous support, that it is the fascia which gives the real support; the muscle bolsters up the tissue, but the fascia holds it. You must get union of the fascia to get a good result. In regard to the preparation of the patient for operation. I confess that I have never used alcohol, iodin or other strenuous agents. The application of fifty per cent of iodin on any mucous membrane must of necessity do away with the protective power of the epithelium. Suppuration after perineal repair is very rare in my hands and I believe that cleansing the vagina with soap and water is all that is necessary. I have never used chromic catgut. The ordinary plain gut lasts seven or eight days and I have had to take it out in some cases. I do not see any objection to curetting the uterus prior to perineorrhaphy. The symptoms of endometritis are hard to define but when there is an endometritis in a large uterus the case will do well if it is curetted. I can see no possible objection to it and it adds another examination to see if there is anything more important that requires attention. If there is much enlargement of the cervix I think it is better to amputate it than to do a trachelorrhaphy. After the uterus is curetted it should be drained to see that there is no residual blood. This I consider a very important matter. In the ordinary repairs of the perineum, Dr. Wade speaks of the use of clips on the skin. We never use any skin sutures. The last suture is placed just outside of the caruncle, and it is very rare that sutures are placed through the skin, except in tears through the spincter. In the repair of fresh tears we ought to be able to pick up the tissues and put them in their proper relation without further traumatism. I hardly think it necessary to do much denuding.

Dr. Hyde: I did not hear all of Dr. Wade's paper but if I am not mistaken he has not brought out anything new in his operation. If I recall it correctly, Channing Barrett, in 1907, reported a similar operation in the American Journal of Obstetrics. He made a mucous membrane flap, and after suturing the muscles separately, brought down this flap and sutured it over the raw surface. My own objection to the Barrett operation, which I did a number of times, was that it left a gaping introitus and that the cosmetic effect was not as good as the Holden. I think we should suit the operation to the condition. Take the relaxation of the vagina in a woman who has not had children; I do not think the muscle operation is necessary; the Emmet operation is the best. Most operators do not do it properly, they do not properly place the sutures. I think Dr. Baldwin brought out an excellent point in regard to the

Micheln clips. After most perineal operations there is very little of the skin taken in. I cannot see where Dr. Wade's operation differs from Barrett's except for the clips. If I am mistaken I am willing to apologize.

Dr. Polak: I have tried the operation which Dr. Wade has described so graphically and have given it up. The introitus was not satisfactory from the general appearance and about six months later it is less satisfactory. The one point that has been brought out is that there is no one operation that is applicable to all cases. Every injury must be studied as to its pathology and for the best method of repair. The primary tears are various and if you tried to repair them all on the same plan, numerous failures would follow. It seems that the advantages claimed are not borne out by the experience of some of us.

Dr. Holden: I was very glad to hear Dr. Wade say that he prefers to wait for three days before operating in a primary tear. I get better results by the delay, especially in an extensive tear.

Dr. Chase: It is not my purpose to discuss the merits of perineorrhaphy. In later years I have been instructed and sometimes amused by the entire satisfaction of different operators in getting results by different methods. It raises the question whether there are not more than two ways whereby these lacerations may be cured. Either these men must delude themselves or they are right. Regarding the sutures in these cases: I have seen Dr. Wade work and have looked on with satisfaction. Apparently he was able to use a large size chromic gut without the knot giving trouble. From my observation it seems unnecessary to use No. 2 chromic gut; when necessary, No. 1 can be doubled. The uncertainty of the time required in a given case to produce absorption of such sutures may, and sometimes is, a very troublesome factor in the results.

Dr. Wade: I want to thank the members for their very kind criticism. I do not claim that this method I have described is applicable to all cases, but our experience has shown us that with slight modifications, it can be used in nearly all tears of the posterior vaginal wall. It is a fascial operation, not a muscle operation as many think. We identify the fascia before suturing.

Regarding the curettment, I can see very little good by doing it. It always makes an exaggerated drainage. Regarding the Barrett operation: it is similar in dissection and replacement to my operation, but in the Barrett operation there is no identification of the fascia and a crown suture is employed. This shortens the posterior wall of the vagina. The differences between his and my operation are at once apparent.

In a careful review of the literature I have not read of an operator who made it a routine to dissect the superficial fascia and sealed the wound with blunted clips.

The interrupted sutures we used three years ago had too many knots. The continuous suture gave better results. A Hagedorn needle is used throughout the entire operation. But it was not until we began to use clips that the results obtained were satisfactory.

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# THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF THE COMMON DISTURBANCES OF CARDIAC RHYTHM.*

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IN a previous paper read before this society, I discussed briefly some of the well-established physiological properties of the heart, but feel that in order to properly present the above subject, it will be necessary to review a little.

*Heart Muscle* has five important properties, namely, *Contractility, Rhythmicity, Stimulus Production, Conductivity,* and *Tonicity.*

*Contractility* in the heart muscle fibers differs from that in the skeletal muscles only in that each contraction is maximal, as Bowditch has pointed out. In other words, the muscle fiber liberates all its available energy at each contraction and is comparable in this way to the liberation of a spring by a trigger. The energy for the next contraction is gradually stored up during diastole, and hence the next succeeding contraction will vary in strength according to the length of time during which the muscle fibers have previously been resting.

*Rhythmicity.*—This property is peculiar to heart muscle and it is important to notice that different portions of the heart, if taken by themselves, contract with a different rhythm. Thus, we note that the ventricles if taken by themselves would contract with a much slower rhythm than the auricles. The portion of the heart which has the most rapid rhythm is that portion where the superior vena cava joins the right auricle and which comprises the remains of the sinus venosus. This portion or "sinus" becomes the pace-maker for the entire heart, due to the conductivity which is also an important quality of heart muscle.

The *Conductivity* of the heart muscle fibers is greatly favored by the anatomical fact that they freely anastamose with one another, forming a continuous mesh-work.

*Stimulus Production.*—If the heart is removed from the thorax and cut off from all its connections with the cerebrospinal and sympathetic nervous systems, it still continues to pulsate regularly; hence the heart produces its own stimulus for contraction. We note that the flow of blood through the heart, and especially through its own arteries, is necessary for this stimulus production. Howell, Loeb and others have further proven that the inorganic salts of the blood serum, the potassium, sodium and calcium ions are also necessary for accomplishing this process.

*Tonicity.*—Tonicity is defined by Hirschfelder as the resistance of the heart muscle to stretching in diastole. Filling of the heart in diastole, will continue until an equilibrium has been reached between the venous pressure and the cardiac tonicity. Mackenzie has emphasized the importance of this property of heart muscle.

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* Read before the Brooklyn Hospital Club, April 14, 1915.

*The Bundle of His.*—The contractile impulse of the heart, starting in the sinus, passes from the auricles to the ventricles through the Bundle of His. Although the muscle fibers of the heart anastamose freely with one another, the fibers of the auricles do not in any place anastamose with those of the ventricles, and the sole connection between these different portions of the heart is through the Bundle of His.

This bundle begins at Keith Flack node just below the end of the superior vena cava and thence passes through the remains of the sinus to the node of Tawara in the interauricular septum, and thence downward to the interventricular septum, where it divides into two branches which run to the apex of either ventricle, supplying the ventricular walls and papillary muscles.

The Bundle of His is composed of primitive muscle cells first described by Purkinje, and the transmission of an impulse from auricles to ventricles takes a certain definite time, about one-tenth of a second, due to the peculiar construction of these cells.

*The Refractory Period.*—The irritability of the heart ceases during and immediately after each systolic contraction and returns gradually until it reaches a point sufficient to respond again with a new contraction, to either a normal or an abnormal stimulus. This period in the cardiac cycle during which the heart fails to be excited to contract no matter what the stimulus, has been named the Refractory Period by Marey, its discoverer.

Although the heart is an automatic apparatus, it works under the control and influence of the central nervous system. The nerves which run to the heart influence the frequency, type and strength of its contractions; they also increase and diminish myocardial irritability and the transmission of the stimulus from one part to another.

There is a very complicated net work of nerves surrounding the heart and it is doubtful whether the anatomy and function of these nerves will ever be entirely worked out, but something is known of the function of the vagus and of the sympathetic nerves with which these plexuses are closely connected.

The function of the *vagus* is principally inhibitory. It arises in the medulla in close relationship with the respiratory and vasomotor centers. Its fibers are sent especially to the venous part of the auricles where it exerts an influence upon the frequency of contraction, and also to the interauricular and interventricular septa where it exerts an inhibitory influence on the muscle contraction and the conductive powers of the Bundle of His. In addition to the centrifugal nerve fibers, the vagus has a centripetal part, the so-called depressor nerve. This runs especially from the aorta, but also from the heart, to the centers in the medulla and if the blood pressure in the aorta becomes too high, the impulse through the depressor nerve to the vagus and the vasomotor centers produces a reflex inhibition and a lowering of blood pressure.

The *sympathetic nerves* contain the accelerator fibers which stimulate the heart to more frequent action. They arise mostly from the first five dorsal segments passing through the stellate ganglion. They are distributed to all parts of the heart. It is plausible to assume that these fibers have an augmenting effect on cardiac frequency, increasing the force of contraction and the conductivity.

The blood vessels, especially the arterioles, are, like the heart, under the influence of inhibitory (dilator) and augmentatory (constrictor) nerve fibers.

We see then that the whole mechanism of the circulation is under the control of the central nervous system and it responds to every incident in the life of the body. Excitement, joy, fear, pain, muscular exertions and many other conditions may in this way affect the heart, blood vessels and blood pressure.

*Irregularities* of the heart have been variously classified. Accordingly when there is no discernable order, we call it arhythmia, when the irregularity occurs according to a certain system, we speak of allorhythmias (altered rhythms) and the pararhythmias are those in which two separate rhythms are going on at the same time.

They have also been classified as to whether they are of extracardiac or intracardiac origin, or because of disturbances of the various properties of heart muscle, such as disturbances of contractility, or of conduction, or of irritability.

Without attempting a complete classification, we will study the forms of disturbed rhythm that are most commonly met with clinically, namely: sinus arhythmia; extra systole; heart block and auricular fibrillation. In addition we will say a few words about pulsus alternans and paroxysmal tachycardia.

*Sinus Arhythmia;* also called respiratory arhythmia, or youthful type of Mackenzie, is not a true arhythmia so much as a changing heart rate. It results from intermittant stimuli passing down the cardiac nerves, particularly the vagus, to the sinus, affecting its irritability. As the sinus is the pace-maker of the heart, the effect of these neurogenic stimuli is to increase or decrease the rate of cardiac contraction, as Reid Hunt and Hooker have shown. The alterations in the pulse rate may result from the stimulation of any afferent nerve, and stimuli may arise from skin, mucous membrane, muscles, viscera or from centers in the medulla.

These neurogenic arhythmias are particularly common in children and young people (hence "youthful type," name given by Mackenzie). This is because of the lesser stability of the nervous centers in earlier, as compared with adult life.

As we should naturally expect, any condition which increases the irritability of the nervous system, such as neurasthenia, emotional states, visceral reflexes or the excessive use of alcohol, coffee or tobacco, is apt to be associated with an arhythmia of this type.

The most common form of sinus arhythmia is the respiratory type. Here due to the stimuli passing to the vagi with each respiration the heart rate is alternately slower during expiration and faster during inspiration. This may be reversed, however, with slowing during inspiration and acceleration during expiration.

The clinical characteristics of sinus arhythmia are a series of three or four rapid beats followed by a series of one or two slower beats, and this change is repeated rhythmically usually with each respiration. The beats are all apparently of the same force, and the polygraph and electrocardiograph records show that each contraction is in every respect normal. The change in the rate is produced principally by a difference in the length of diastole.

It is important to investigate these cases carefully so as to make an accurate diagnosis, as sinus arhythmia warrants a good prognosis; Friedrich Muller going so far as to say that it is never associated with serious impairment of the heart or circulation.

*Pulsus Paradoxus and Reigel's Pulse* are very similar to the above-described condition and are accounted for in the same way. They occur with pericardial effusion and adherent pericardium, and are characterized by a small pulse during inspiration and a larger pulse during expiration.

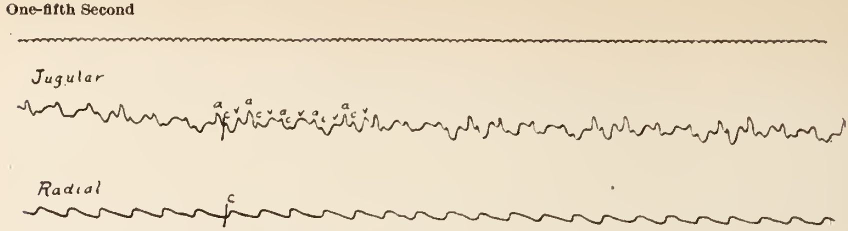

Fig. 1. Normal Jugular Tracing. Harrison, March 19, 1915. P. R. 72. B. P. 210-135.

*Extra Systole or Premature Beat.*—This is one of the most common of irregularities and most of the intermittant pulses met with in practice belong in this class; for instance pulsus bigeminus and pulsus trigeminus.

Extra systole may arise in any part of the heart, either as the result of definite external stimuli or as the result of some change, organic or functional, in that part of the heart wall where it arises. Such a change may be brought about by overstretching of the wall as a result of inability of the chamber to empty itself. This is frequently seen associated with high blood pressure in the arteries, and sometimes with overstretching of the left auricle in severe grades of mitral disease.

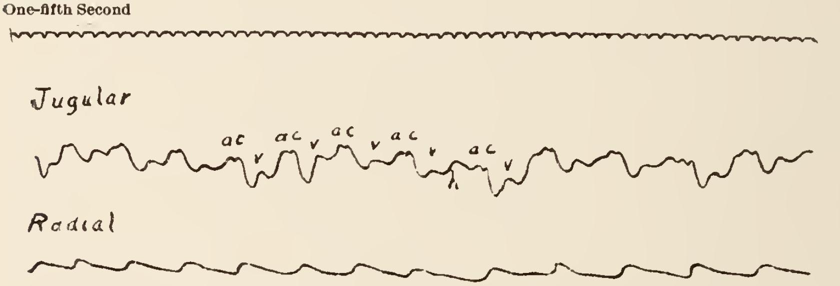

Figure 2. Sinus Arythmia. Worten, March 3, 1915. P. R. 82.

Extra systole also not uncommonly arises in strong, practically normal hearts when the irritability of the heart is increased by some toxic action as from nicotine, coffee, bacterial toxins, auto-intoxication or even reflex irritation from the gastro-intestinal tract.

The commonest place for extra systoles, or premature beats, to arise is in the wall of the ventricle, but they may originate in any part of the heart wall; the right or left auricle, the right or left ventricle, or the bundle of His. The premature beat occurs early in diastole, and hence when the next normal beat occurs, the ventricular muscle is refractory, consequently its normal beat is dropped out and replaced by a long pause. When the following normal beat occurs it is unusually forcible because of the long period of rest. Occasionally the extra systole may be interpolated between two normal beats without any dropping out.

The site from which the extra beat arises can usually be discovered by means of a polygraph tracing or an electrocardiogram. In the jugular pulse tracing of ventricular extra systole, we commonly note a very large abnormal wave. This is due to the coincidence of the normal A wave with the C wave of the abnormal beat. In the radial pulse we note the sequence of premature beat, long pause, and forcible normal beat.

On physical examination the large flapping pulsation of the jugular can sometimes be observed by simple inspection of the neck, and on listening over the apex with the stethoscope, two short sharp sounds will be heard at the time of the extra systole, followed by a long pause and the thump of the big beat.

Patients with this condition frequently complain of palpitation, or of the sensation of the heart flopping over; sometimes they are annoyed by the thumping of the big beats.

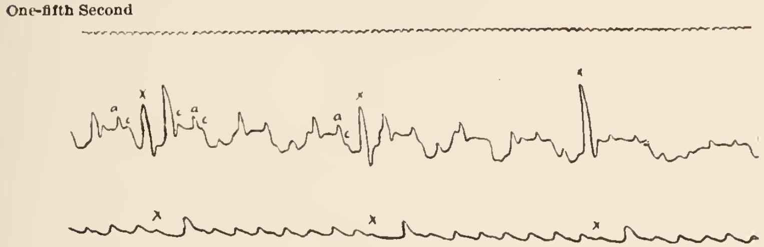

Figure 3. Extra Systole. P. R. 85. Chronic Nephritis, B. P. High.

From the standpoint of *prognosis* and *treatment* cases of extra systole may be divided into two groups: (1) those whose hearts are otherwise normal; (2) those associated with organic changes in the heart or blood vessels. Muller believes that extra systole is always associated with organic changes in the heart muscle. Mackenzie goes to the other extreme and states that most cases are negligible. Many cases undoubtedly occur in otherwise healthy persons, whose blood pressure is normal and who have no signs of circulatory disease. When patients of this kind after careful search show no signs of other disease, the extra systole may be entirely disregarded. We should bear in mind, however, the frequent association of extra systole with diseased heart muscle, or at least with hearts which have been rendered more irritable by fatigue or some toxin. Every effort should be made to bring such condition to light and when possible, to remedy it.

The extra systoles in themselves do not as a rule demand treatment. Avoidance of fatigue, abstinence from tea, coffee, alcohol and tobacco, may be indicated, and, where signs of myocardial weakness are present, appropriate measures for the improvement of this condition should be taken.

*Heart Block.*—When the conducting path or bundle of His becomes impaired and there is delay between auricular and ventricular contraction, we have the condition of heart block. In some cases there is simply a lengthening of the interval between the contraction of the auricle and of the ventricle (prolonged A-C interval). In others, some of the ventricular contractions fall out altogether. Finally there are cases where the bundle of His fails to conduct any impulses, and these are known as complete heart block or Stokes-Adams disease.

Cases of partial heart block may be (*a*) functional from overstimulation of the vagus nerve, seen clinically in digitalis poisoning; (*b*) organic, from disease in the bundle of His. The conduction time in the bundle may be prolonged by certain diseases such as pneumonia, influenza or rheumatism, causing a postfebrile bradycardia.

Where the bundle of His is completely cut across and no impulses are conducted, the ventricles do not stop pulsating, but take up their own rhythm independently of the auricles. It is characterized by its much slower rate, 10 to 30 per minute.

The clinical symptoms associated with complete heart block are, syncopal attacks, vertigo and occasionally convulsions, together with a very slow pulse.

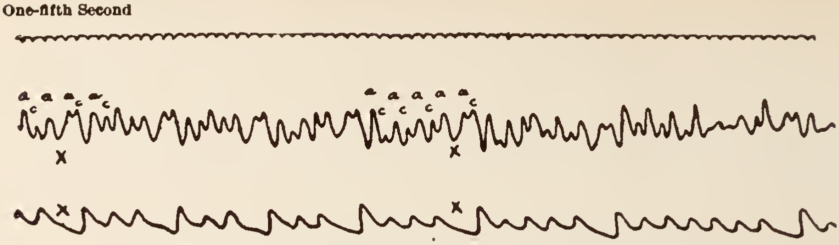

Figure 4. Partial Heart Block. Crowley, April 7, 1915. Digitalis Heart Block. P. R. 90. Hyperthroidism.

The *diagnosis* is made by the slow pulse and by the polygraph or electrocardiograph records. Where the heart block is partial there will be a delay between the A and C waves in the jugular pulse tracing and occasionally the C wave, which denotes ventricular contraction, will drop out entirely. Where the heart block is complete, the A waves in the jugular pulse will be seen to occur rhythmically at their normal rate but not in any case followed by the C wave. Independent C waves will occur in the tracing rhythmically at a much slower rate, denoting the independent ventricular systoles. The electrocardiogram shows corresponding findings.

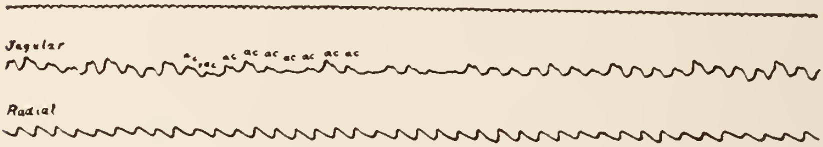

Figure 5. Same, April 8, 1915, One Hour after Atropine Sulphate gr. 1/50 (hypo) P. R. 120.

The *prognosis* and *treatment* in heart block depends largely upon the etiology. Where the block is due to overstimulation of the vagus nerve, such as is seen in digitalis poisoning, stopping the digitalis and paralyzing the vagus with atropine will usually bring about a return to normal. Where the block is complete, heretofore it was thought always to be due to some organic division of the conducting path. We now know that in some of these cases there is not a complete permanent division of the bundle, but the complete block may be due to more temporary causes such as poisoning from infectious diseases or asphyxia. In this class of cases complete recovery sometimes occurs. Even in the cases of organic origin, after the symptoms of syncope have persisted for some time, a degree of toleration becomes established and circulation is carried on with the slow ventricular rate. Such patients, however, are never able to undertake any but the most restricted activities.

*Auricular Fibrillation; also known as absolute arhythmia or disorderly heart.*—This type of cardiac irregularity is of great importance and interest because of its association with serious heart failure: seventy per cent, according to Mackenzie, of the cases of serious heart failure having this rhythm. In the Brooklyn Hospital about half the cases show it.

The mechanical effect of any arhythmia, but particularly auricular fibrillation, is to slow the circulation, as may be easily seen from the volume curve of the heart during the period of irregularity. The slowing tends to bring on cyanosis and arterial constriction. The long pauses cause an increased pressure in the veins which tends to overdistend the heart during diastolic filling. Thus is established the vicious circle: irregularity, slowing of the circulation, and dilatation of the heart.

Auricular fibrillation is very apt to occur in hearts in which the muscle fibers have begun to undergo the degenerative changes associated with age or which are prone to accompany many of the chronic diseases, especially chronic nephritis and arteritis. In addition, rheumatic heart affections, either acute or chronic, are particularly apt to be factors in the production of this type of arhythmia, hence its frequent association with mitral disease. It sometimes sets in during the course of an acute illness such as pneumonia or rheumatic fever, often with disastrous effects and may be seen in the later stages of exophthalmic goitre when the heart is beginning to give way from its prolonged overwork.

Some of the cases of auricular fibrillation are not accompanied by serious circulatory failure and these are first discovered when the patient presents himself for examination for some other cause. Even these cases, however, if questioned will usually admit shortness of breath on slight exertion and inability to do muscular work without fatigue.

Most of the cases which we see are accompanied with all the signs of acute myocardial insufficiency, that is dyspnea, cough, cyanosis and dropsy. If the pulse of such a patient be felt, it will be found to be extremely irregular, beats following one another in a disorderly fashion, some small, some larger and the intervals between the beats likewise being of irregular length. If a stethoscope be placed over the apex of the heart and the rate counted and at the same time the pulse be counted, it will be found that the apex rate is greater than the radial pulse rate, in other words, there is what is known as pulse deficit. If the blood pressure be taken by the auscultatory method, some of the beats will be heard at a relatively high pressure, say 150, more at 140, and so on down until all of the beats come through at a very much lower pressure. This is known as a relative pulse deficit.

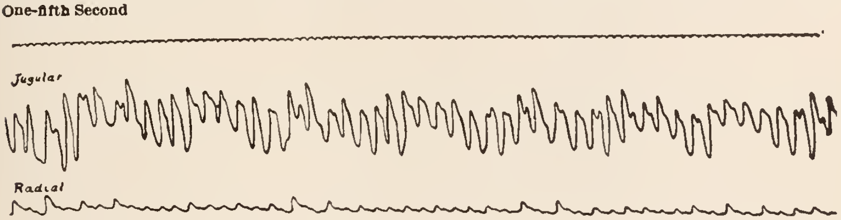

Figure 6. Auricular Fibrillation. Behan, March 3, 1915. P. R. 120.

The polygraph findings in these cases are fairly characteristic. The radial pulse tracing shows the disorderly character of the ventricular contractions, the jugular pulse tracing shows a marked change from the normal. Whereas the normal jugular tracing shows three distinct waves, the A wave resulting from auricular contraction, followed by the C and V waves produced by ventricular contraction, in this condition of auricular fibrillation we note complete disappearance of the A wave (or evidence of auricular contraction) and we have one large wave which may be notched and is due to a combination of C and V. This type of jugular pulse tracing is known as a positive venous pulse or ventricular type of venous pulse.

It was not until the electrocardiograph came into use that the significance of these clincial and instrumental findings was fully

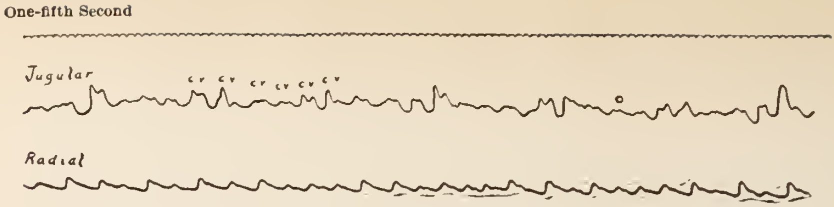

Figure 7. Same, March 6, 1915, after Digitalis for Three Days. P. R. 80. Apex Rate 80.

understood. When the observers began to study electrocardiograms taken from patients suffering with absolute arhythmia, they noted that the wave due to auricular contraction (known as the P wave) was absent, but that in its place there were a number of little wavelets. In 1909, Lewis in England and Rothberger and Winterberg in Germany found this to correspond with electrocardiograms taken from dogs in whose hearts the auricles were fibrillating and whose pulse rhythms were correspondingly irregular. The evidence has accumulated and it is now well established that it is fibrillation of the auricles which causes the onset of this disorderly rhythm.

Lewis' description of the gross appearance of a fibrillating auricle is very graphic and is as follows:

"The walls of the auricles stand in the diastolic position; systole either complete or partial, is never accomplished; the wall as a whole is stationary but careful examination of the muscle reveals an extremely active condition, it appears to be alive with movement; rapid minute and constant twitchings or undulatory movements are observed in a multitude of small areas upon the surface."

The fibrillations send impulses down the bundle of His and stimulate the ventricles, but these stimuli are so feeble and at so rapid a rate that the ventricle only responds to an occasional stimulus and hence the irregular rhythm. Extrasystoles or even heart block may accompany auricular fibrillation.

As regards *prognosis,* we must bear in mind that auricular fibrillation is only a symptom of some myocardial change and that while it is a symptom of serious import the accompanying pathological states, whether acute rheumatic fever, chronic nephritis, hyperthyroidism, or valvular disease must be carefully considered in giving a prognosis. As before stated these accompanying lesions may be of a very diverse nature and it is sometimes difficult to estimate their importance. In the main, where the abnormal rhythm has been of recent onset and where there is reason to think that the heart muscle is not the seat of marked chronic degenerative disease, the prospects of a return to a normal rhythm and a competent circulation are very much better than where some chronic disease such as nephritis with its chronic myocarditis has been present for years. In such cases, when the auricles go into fibrillation and the pulse becomes irregular, the changed rhythm is usually permanent and has given rise to the term "Pulsus Irregularis Perpetuus." While such a case can be very much improved by treatment, the pulse remains perpetually irregular and as a result of this irregularity, the heart is constantly working at a mechanical disadvantage.

*Treatment.*—Perhaps the most important reason for clearly recognizing auricular fibrillation is because of the good results obtained by proper treatment. It is in this class of cases that digitalis and drugs of the digitalis group exert an almost marvelous effect.

The treatment of absolute arhythmia includes the entire therapy of myocardial insufficiency and while simply outlining some of the principles of this subject, I would like to go into a little greater detail as regards the use of digitalis.

The effects of *digitalis* as shown by Withering, Cushny, Lewis, Fraenkel, Mackenzie, Hirschfelder, Cameron and others may be summed up as follows:

(1) Stimulation of the vagus, with the effect of slowing the heart and decreasing the conducting power of the bundle of His.

(2) Stimulation of ventricular contraction.

(3) As Cameron has shown, increasing cardiac tonicity.

(4) Experimentally at least, vasoconstriction.

Its effect in auricular fibrillation is so pronounced because by stimulating the vagus nerve, it produces such a decrease in the conductivity of the His bundle, that many of the ineffectual contractile stimuli from the fibrillating auricle are blocked off, and the ventricle is thus protected from the harassing and exhausting effects which these impulses would otherwise produce. Indeed, sometimes the good effects of digitalis are not observed until it has produced almost a complete heart block. To get these effects, it is necessary, as Mackenzie has shown, to give the drug in sufficiently large doses; the ordinary doses being entirely too small.

Our routine is as follows: when a patient is seen suffering with auricular fibrillation and the accompanying acute myocardial insufficiency, we begin by giving either intravenously or intramuscularly one cubic centimeter of Merck's solution of Strophanthin Boehringer. We then give immediately a capsule containing two grains of powdered digitalis leaves (Allen's English leaves) and repeat every four hours until the pulse, or rather the apex rate, comes down to 80. We then reduce the dose to two or three capsules a day. The Strophanthin is given because its rapid action enables us to obtain a digitalis like action during the interval of 12 to 24 hours which elapses before the effect of the powdered leaves is manifest.

High tension, which is quite commonly present in these cases, is no contraindication to the use of digitalis. Vasodilators may be given in addition if desired.

Besides the above, the patient should receive the usual treatment of rest in bed upon a backrest, free purgation, restriction of the salt intake and limitation of fluids to perhaps 30 or 35 ounces a day. Sometimes a hypodermic of morphine will be found desirable and desperate cases may require venesection.

The results of the above treatment are marked within 24 hours. The pulse deficit soon disappears or is reduced to only one or two beats per minute, the radial pulse becomes slow, more even and stronger. As Stuart Hart has shown, the mean blood pressure, that is the average systolic pressure, usually rises and, as many observers have shown, the pulse pressure is increased and the excretion of urine is greatly augmented. It may be necessary to push the digitalis to the point where nausea appears, as sometimes not until this point has been reached do we get any improvement in the circulation. (Mackenzie, Williams and others.)

After the acute danger is past and the circulation is once more competant, we should find the dose at which the patient is most comfortable; his own sensations being a good guide to this (usually 2 to 4 grains a day).

A period of rest in bed, about two or three weeks, is a necessary part of the after treatment. Acute rheumatism must be treated if present and chronic ailments, such as nephritis or hyperthyroidism, improved when possible.

Exercise should be carefully graduated. It may begin as systematic massage while the patient is in bed, and after he is about, it may be increased cautiously. Resistance exercises and graduated walking up an incline, judiciously used, will sometimes greatly increase the reserve power of the heart.

Hospital patients should be followed up after leaving the hospital and made to keep in touch with the dispensary or cardiac class. If not kept under observation the cardiac insufficiency will soon recur; one of our cases having a history of eleven admissions to the Brooklyn and other hospitals. Stair climbing should be avoided by living on the ground floor and work must be non-laborious. Change of occupation may be necessary, and for poor people this can be accomplished at the Cardiac Industrial School.

Good results follow this treatment. Few deaths have occurred in my experience in these patients while they were under observation. Out of a total of twenty cases seen in the last two years, mostly in the Brooklyn Hospital, only one case, a periodical drinker, died; this during one of his spells of dipsomania. One other case died at home three or four months after passing from our control.

*Pulsus Alternans.*—This is a rather uncommon condition and is supposed to be due to an exhaustion or loss of the contractile power of the heart. The rhythm of the pulse is perfectly regular but we have a strong beat regularly alternating with a weak one. Usually it can only be recognized when a pulse tracing is made, as the difference in beats may not be appreciated by the palpating fingers. A great majority of these cases is associated with serious degenerative changes in the heart muscle, usually in elderly people, but sometimes in younger people with evidence of extreme exhaustion. It occasionally occurs in severe attacks of pneumonia or other acute disease.

True pulsus alternans is quite uncommon. It may be simulated by an extrasystole which recurs regularly after each normal beat, in other words a pulsus bigeminus. The differential diagnosis between these two conditions can only be made by means of the polygraph or electrocardiograph, where in extrasystole the small beats are seen to have an abnormal origin and will vary accordingly, whereas in pulsus alternans each beat is in every way normal except that every other beat is weaker than the preceding one. Pulsus alternans is a very grave condition except possibly those cases occurring during an attack of paroxysmal tachycardia. In Mackenzie's series of a dozen cases all died within three years. One case that I have seen died within a few days.

Treatment should be directed to the associated conditions which have produced the myocardial exhaustion, particular care being used against the slightest over-exertion.

*Paroxysmal Tachycardia.*—This term is used to indicate a sudden great increase in the rate of the heart followed, at a variable time, by sudden cessation of the rapidity and resumption of the normal rate. The abnormal rate may vary from 150 to 300 per minute. It may be closely simulated by transient fibrillation of the article in which the contractions are very rapid. Here the rhythm is irregular.

The cause of paroxysmal tachycardia is unknown, although exertion, excitement and various toxins, bacterial, intestinal or otherwise may cause attacks in predisposed individuals. The attacks may last from a few minutes to days and sometimes recur for years. It is equally common in both sexes and may occur at all ages. Half of the cases are said to occur in hearts free from organic lesions; many of the remaining cases show a mitral stenosis.

Various types of cardiosclerosis have been found at autopsy, but the nature of the functional disturbance is still obscure. The effect on the circulation is to slow it. Patients usually complain of a fluttering or palpitation in the precordial region, possibly a feeling of fullness in the neck; dyspnea is common, although some of the patients are surprisingly comfortable, two out of six cases I have seen being up and walking about. The pulse is barely palpable, but the stethoscope over the apex enables the rate to be counted. Attacks cease as suddenly as they appear and between the attacks there may be no signs of disease.

As regards *treatment*, drugs have little influence upon it as a rule. Digitalis and bromides are most commonly used. Between attacks everything possible should be done to reduce the irritability of the heart and nervous system. Reflex irritations, tea, coffee, and tobacco, alcohol, excitement, over-exertion, worry and fatigue should all be avoided. Some patients are able to stop their own paroxysms by yawning or taking a deep inspiration, but in most cases the attacks stop for causes unknown, which are entirely independent of any treatment employed.

In concluding this none too complete presentation of a very important subject, I should like to emphasize the important fact that provided one has a clear idea of the underlying physiology, most of the cardiac irregularities are easily recognized clinically, without the use of special apparatus.

The changing pulse rate of the sinus arhythmias is readily made out. It may be exaggerated by having the patient breathe deeply. In extrasystole the little premature beat in the radial pulse followed by the pause and the big beat are quite characteristic. Where the premature beat is too weak to reach the wrist, by listening with the stethoscope over the heart, we may still hear the sharp sounds caused by the extrasystole, during the intermission in the radial. This is in contrast with partial heart block, where no sounds are heard over the heart during the intermission. In addition, the flapping jugular pulsation may also be seen in extrasystole.

Complete heart block may usually be recognized by the slow pulse rate. Partial heart block must be distinguished from extrasystole as before stated, and graphic records may be necessary.

Auricular fibrillation is characterized by its absolutely disorderly rhythm and many times by the serious heart failure accompanying it. Pulsus alternans fortunately is rare. It should not be diagnosed without the aid of a pulse tracing.

Paroxysmal tachycardia presents no difficulty in diagnosis.

For Physiology of Heart and Mechanism of Arhythmias consult:
  Thos. Lewis. Mechanism of Heart Beat. London. Also Auricular Fibrillation, *Brit. M. J.*, 1909, ii, 1528.
  James Mackenzie. Disease of Heart. 3d ed.
  A. D. Hirschfelder. Disease of Heart and Aorta. 2d ed.
  Friedrich Muller. Nervous Affections of Heart. *Arch. Int. Med.*, 1907, i. i.
  W. H. Howell. Text book of Physiology.
For study of Digitalis consult:
  A. R. Cushny. *Am. J. Med. Sc.*, 1911, cxli, 469.
  Thomas Lewis. *Brit. M. J.*, 1910, ii, 1670.
  James Mackenzie. Disease of Heart, 3d ed.
  Theodore Janeway. *Arch. Int. Med.*, 1914, xiii, 361.
For study of Strophanthin and Strophanthus consult:
  Hatcher and Bailey. *J. Am. M. A.*, 1909, lii, 5.
  Albert Fraenkel. *Arch. f. exp. Path. and Phar., Leipz.*, 1907, lvii, 79.
  H. C. Bailey. *J. Pharm. and Exp. Ther.*, 1909, i, 349.

# AURICULAR FIBRILLATION.*

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"WHEN a patient who is known to have mitral stenosis, and who requires treatment for cardiac failure, exhibits not only dropsy, venous engorgement and cyanosis, but a rapid and disordered heart action in which there is no rhythmic sequence, he presents a characteristic picture of auricular fibrillation."

When first I read these words written by Lewis, I was in attendance upon a patient whose heart was behaving in a manner which puzzled me. She was a woman about thirty, married, childless, neurasthenic, with a rheumatic history, and presenting the evidences of mitral stenosis with slight cardiac inefficiency but no pulse irregularity. Her heart had never given her much trouble, and her attention was therefore centered on her neurasthenic symptoms. She was up and about all of the time attending to the duties of her home. One morning I was summoned to see her and found that without apparent cause she had suddenly developed a very rapid, irregular, disorderly and delirious heart with change of murmur. Further study of her case and examination of the literature convinced me that I was dealing with auricular fibrillation, a disturbance of cardiac mechanism the auricular origin of which was recently demonstrated by Lewis (1909); the condition formerly (1908) described by McKenzie under the name "nodal rhythm."

This woman's heart, in spite of appropriate treatment, never regained its normal rhythm. Under its heavy burden of inefficiency and ventricular delirium it finally became exhausted, complete failure ending the scene. (She died about six months after the onset of fibrillation.) Further reflection on the rather bewildering clinical phenomena which this case had persistently presented, and discussion of the matter with some of my colleagues constrained me to the opinion that the fibrillating auricle often goes unrecognized; and it is with this idea in mind that I have taken the liberty of bringing up the subject for your consideration.

Of course, knowledge of auricular fibrillation, as of all branches of cardiology, has in its final analysis, a single purpose; namely, the prevention of heart failure. But the latter phrase must be used advisedly, for in dealing with this subject there can be nothing more misleading than a superficial conception of that term. It must be understood that by "heart failure" is meant, not necessarily complete cessation of function, nor even advanced failure, but rather, as McKenzie has expressed it, a condition in which the heart is unable to maintain an efficient circulation when called upon to meet the efforts necessary in the daily life of the individual.

Until quite recently the back pressure theory of the production of cardiac failure held universal sway. This theory has fallen under what seems to be just criticism as having its origin in misconceptions of the physical phenomena presented. Indeed, it is stated by McKenzie that owing to misinterpretation of the cardiac sounds and noises upon which that theory was based, it is now questionable whether the discovery of auscultation, so far, has done more harm than good.

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* Read before the Medical Society of the County of Kings, May 18, 1915.

With this repudiation by McKenzie of the back pressure theory, come similar opinions upon the subject from other eminent cardiologists including Lewis and Ritchie, who express the belief that explanation of cardiac failure should, for the most part, be sought in certain deviations from what is now known as normal cardiac mechanism, and that these deviations frequently manifest themselves in either slight or marked cardiac and pulse irregularities and so-called functional disturbances of rhythm which may properly be regarded as evidences of remote or near cardiac inefficiency.

It may be interesting in passing to refer, briefly, to a few of these disorders of cardiac mechanism in order that we may compare their clinical pictures with those presented by fibrillation of the auricle.

The first of these which might be mentioned is that disorder of the heart beat occurring in young adults which is characterized by a periodic irregularity of the pulse following separate and deep acts of breathing. This is called sinus arythmia, a disorder in which the whole heart is involved. These sinus irregularities are usually due to alterations of the vagal tone and will generally disappear with exercise, with fever, or shortly after the administration of atropin.

In many patients in whom the radial pulsations and heart beats run with perfect uniformity for long periods, an occasional and isolated disturbance is noted. The pulse intermits; it loses one of its serial beats at intervals. When the heart is examined it is found that at the moment of the disturbance, the ventricular contraction appears before the rhythmic beat is due and that this early beat is followed by a pause of unusual length. For this disturbance of mechanism Lewis has substituted the term premature contraction for extra-systole, the term used to describe it in the past.

If, in a like case, where the occasional pulse fails, a similar failure of ventrical action is discovered so that on listening to the apex beat no abnormal sounds are heard, but the heart remains silent throughout the whole of the pause, the phenomena are evidences of another condition, namely heart block. But it should be remembered that heart block manifests itself in many other ways and in no way which contrasts more thoroughly with the example just cited than by its production of perfectly regular pauses of conspicuously slow rate.

The term paroxysmal tachycardia is used by Lewis in a restricted sense. He reserves it for those disturbances of cardiac mechanism in which an absolutely abrupt acceleration of regular heart beat subsequently terminating in an equally abrupt manner, is repeated from time to time.

Now and then among our heart cases, more especially in the elderly, we find regular and accelerated heart action at rates of 120 to 160 per minute. This acceleration is noticeable for its uniformity under all sorts of conditions and for its tendency to persist without apparent cause. It is generally the result of auricular flutter concerning which much has recently been written, a condition to which both Ritchie and Lewis are devoting special consideration. This condition of flutter may be mistaken for fibrillation or it may, in the same heart, alternate with fibrillation. But where there is perfect rhythmic action of the ventricles fibrillation, as a rule, may be excluded.

A very interesting disturbance of cardiac mechanism has been authoritatively referred to as follows: "If in a case of renal disease, or arteriosclerosis, the pulse tension is high, Cheyenne-Stokes breathing perhaps is present, and the pulse is regular in rhythm but varies in force so that each alternate beat is strong and each alternate beat is relatively weak, an example of what is called alternation of the pulse is under observation."

These are a few disorders of the heart beat which, in the light of modern cardiology, are occupying attention.

I have chosen to limit my remarks, at this time, to the disturbance of cardiac mechanism known as auricular fibrillation because its scientific demonstration is regarded by eminent cardiologists as the most important discovery yet made in the domain of functional cardiac pathology. We are informed by McKenzie that sixty to seventy per cent of all cases of serious heart failure met with in practice owe the failure directly to this condition or have failure aggravated by its presence. Moreover there seems to be little difficulty in recognizing it as a distinct clinical entity and its proper appreciation by the clinician affords him a sure basis for rational therapy. Indeed intelligent application of this therapy often enables the discriminating physician to anticipate serious inefficiency and failure, to relieve great distress and suffering, and to prolong and save human life which otherwise would be lost.

Now in order that we may have a clear understanding of this subject, I am going to ask your indulgence while I say a word concerning modern cardiac physiology. Whether the myogenic or neurogenic theory of cardiac action be accepted, it seems to be settled that in the evolution of the heart from the tube of the embryo, cardiac muscle has retained specialized cell function which endows its tissue with: 1st, the power of producing a stimulus which can excite the heart to contract—stimulus production; 2nd, the power of being able to receive a stimulus—excitability; 3rd, the power of conveying a stimulus from fiber to fiber—conductivity; 4th, the power of contracting when stimulated—contractability; 5th, the power to retain a certain amount of contraction even when the active movement has ceased—tonicity.

Bearing these facts in mind we recall that the complete beat of the normal heart consists of a contraction of its chambers in an orderly sequence. The wave of contraction starts in a small and newly discovered mass of tissue, the sino-auricular node, which lies imbedded in the upper and anterior end of the sulcus terminalis. This node has been named the pace-maker of the heart. The sulcus terminalis runs, as may be remembered, from the junction of the right auricular appendix and the superior vena cava toward the inferior vena cava. The tissue of the node, consisting of a specialized network of muscle cells richly supplied by the nerves of the heart which enter in this region, lies, therefore, at the mouth of the superior vena cava and is imbedded in the right auricle. The contraction which commences in its neighborhood spreads through the walls of both auricles and is transmitted by the auriculo-ventricular node to the auriculo-ventricular bundle, thence to the ventricles. This bundle, as you will recall, is the bundle of His. It rises in the auriculo-ventricular node which lies at the base of the auricular septum on the right side, below and to the right of the coronary sinus. From this point the bundle runs along the top of the inter-ventricular septum just below its membranous part and then divides into the right and left septal divisions which run down in each ventricle in the inter-ventricular septum, and pass into the papillary muscles arising from the septum. From the papillary muscles fine bands of delicate fibers run to the ventricular muscle near the apex of the ventricle. It is easy, says Starling, to determine the course of the bundle in sections of the heart since the muscle fibers composing it are of a more primitive character than the rest of the cardiac musculature and have indeed long been known and distinguished under the name of the fibers of Purkinje. It is found that division of this bundle absolutely destroys functional continuity between the auricles and ventricles, and that the fibers of it may be destroyed by disease, thus producing the pathological changes and symptomatology which characterize Adams-Stokes syndrome, or heart block, and other disturbances of rhythm. It is quite apparent, therefore, that definite knowledge of the diagnosis and treatment of disease of the heart is impossible unless the functions and pathology of this conducting system are kept in mind. This fact applies especially to a proper understanding of auricular fibrillation, the subject of my remarks.

What is this auricular fibrillation that is regarded as the greatest discovery in modern cardiology? If I were asked by a layman to define it, I should be tempted to tell him that it is an effort on the part of half of the heart, which is shirking, standing stock still, to induce the other half to do its work for it. It is a curious condition, this one of fibrillation. The individual fibers of the auricle in place of contracting in an orderly and simultaneous manner during systole, contract rapidly and independently of one another. It is really a paretic condition of the auricle, or one perhaps, of contractile impotence in which, however, there is said to be a fine mural stimulative activity of the muscle elements. In the electro-cardiogram the condition appears as a fine tremor of the auricle. The definition of auricular fibrillation as given by Lewis is, of course, authoritative, and therefore worthy of the most careful consideration. He says, "auricular fibrillation is a condition in which normal impulse formation of the auricle is replaced by stimulus productions at multiple auricular focci. Coordinate contraction in the auricles is lost, the normal and regular impulses transmitted to the ventricle are absent, while rapid and haphazard impulses produced in the auricle take their place and produce irregularity in the ventricular action. The walls of the auricle stand in the diastolic position; systole, either complete or partial, is never accomplished, the wall as a whole is stationary, but careful examination of the muscle reveals an extremely active condition; it appears to be alive with movement; rapid, minute and constant twitching or undulatory movements are observed in a multitude of small areas on its surface." One of the most interesting points to the clinician in all this is that auricular fibrillation is always found associated with a well marked irregularity of ventricular action of which it is regarded as the direct cause, a shower of auricular impulses falling upon the ventricles by way of the auricular-ventricular bundle, and causing those chambers to act with an irregularity often of high rate. This ventricular delirium is manifested in irregularity of the rapid pulse, is readily appreciated at the apex, and in the modification of the heart sounds.

The exact cause of auricular fibrillation is still obscure, although the conditions under which it exists seem to throw considerable light on its etiology. In the human heart it is found under a variety of conditions but it is probably always due to altered nutrition of the muscle. In experiment it can be produced by electrical stimulation of the auricle and the clinical conditions attending it resemble very closely those resulting when the auricle is forced into a state of fibrillating delirium by faradization. The condition seems to be much more common in men than in women and is extremely rare before the age of seventeen years. While auricular fibrillation has been noted in pneumonia, in infective endocarditis, cardiac strain, especially in the elderly, diphtheria and other infections productive of cardiac change, rheumatism is found to be the most important etiological factor in its production and mitral stenosis with rheumatic history and auricular fibrillation are bosom companions. Thus in an analysis of 152 cases of auricular fibrillation Lewis found a rheumatic history in 66 per cent and in 79 per cent 52 had mitral stenosis. Of 106 cases of mitral stenosis in an out-patient department, 22, or approximately one-fifth, showed auricular fibrillation. Lewis estimates that the proportion among in-patients is much higher; he says it exceeds 50 per cent. Independent of rheumatism, auricular fibrillation is related to advancing years, the largest proportion of cases occurring between the ages of forty and sixty, the maximum being reached between the ages of forty and fifty.

The study of the morbid anatomy and auricular fibrillation is still in its infancy. It will probably take years of laboratory investigation and clinical observation to place it on a sure footing. That important work is, however, now well under way, both in this country and in Europe. "That valvular lesions are present in a number of the cases," says Lewis, "is obvious from bedside examinations; enlargement of the whole heart is common, and dilatation or hypertrophy of the auricles is more frequent than are the valve lesions which might be held to account for them. The most constant structural alterations which are found are discovered by histologic examinations of the heart musculature. Usually this shows a more intense grade or subacute or chronic inflammatory change progressing to fibrosis and the auricles are conspicuously affected. A diffuse fibrosis accompanied by leucocytic infiltration and atrophy of the neighboring muscle cells, is the most frequent change. But," says Lewis, "this tale told by the microscope, does not justify us in holding that the inflammatory reaction is the cause of altered mechanism." Continuing, he observes, "Many of the microscopic lesions are to be regarded as the result of infections producing heart failure rather than fibrillation; similar lesions are found where fibrillation has never occurred; and hearts that have shown this disorder may not present the lesions described." Upon this state of facts we must conclude that we are not yet in a position to characterize, with any degree of accuracy, the exact nature of myocardial change favoring the production of auricular fibrillation. Indeed that is the consensus of authoritative pathological opinion, the world over.

Referring to the symptomatology and diagnosis of auricular fibrillation, it is impossible, in the short time at our disposal, to do more than touch the clinical aspect of the subject, to say nothing of the experimental side. It is my belief, however, that in dealing with these disorders of cardiac mechanism much in the way of diagnosis can be accomplished at the bedside by the aid of the simpler means. In diagnosing suspected conditions, knowledge of the frequency, or lack of frequency of their occurrence is very helpful. Auricular fibrillation is by no means rare. On the contrary it is quite common. We have the authority of both Lewis and McKenzie for the statement that of all the cases of cardiac failure admitted to a general hospital, sixty to seventy per cent show the evidences of fibrillating auricles.

The clinical observer can usually recognize this condition by the peculiar character of the pulse, the rhythm being irregular and the irregularity of a very disorderly kind. Irregularities, apart from those due to auricular fibrillation, generally have a distinctive character such, for example, as the irregularity in the heart of the young where variations in rate coincide with phases of respiration, or, as the intermittent pulse, or the irregular heart due to extra-systole, the irregularity breaking in on an otherwise regular rhythm, unless it occurs with a normal pulse-beat. In auricular fibrillation, as a rule, the pauses between the beats are continuously changing and two succeeding beats are rarely of the same strength, or, the pauses between the beats of the same duration. It is that form of irregularity so frequently met with in the elderly and in patients with hearts damaged by previous rheumatic infection. It is customary in rheumatic hearts to take into account only the valvular changes, while as a matter of fact the really serious element is the slow insidious change in the muscle that has started during the attack of rheumatic fever and which finally provokes fibrillation of the auricle. In the latter class the association of irregular hearts with mitral stenosis has long been recognized, and on account of this association the irregular pulse is sometimes described as the "mitral pulse" with which all clinicians are familiar. Indeed we are more or less familiar with all the clinical manifestations usually presented by auricular fibrillation. The present diagnostic difficulty seems to lie in the fact that owing to lack of knowledge of their source we have ignorantly acquired for them a misleading nomenclature. Just as we were misled by our misconceptions of the clinical phenomena attending pathological conditions occurring in the appendix of the caecum so have we been misled here. What is needed therefore in cardiac therapeusis, and in our attempts at diagnostic discrimination in dealing with cardiac mischief, is appreciation of the fact that many myocardial inefficiencies and failures should properly be attributed to disturbances of mechanism, especially to fibrillation of the auricles.

This phase of our subject was so concisely and graphically set forth by Lewis in his "Herter Lecture," delivered at the Johns Hopkins Hospital last October, that I am going to take the liberty of quoting his exact words bearing on it. "We come now," he says, "to the most frequent and important disorder of the human heart beat, that so familiar to you as an accompaniment of failure of the muscle. The irregularity of the pulse which, on account of its complexity has given rise to the term delirium cordis, was one of the last to receive adequate explanation; it has been studied since the active days of Marey, Sommerbrodt and Riegel. The first clue to its real meaning came from two laboratory workers in this land, Cushing and Edmunds; it is now definitely known to result from what is termed fibrillation of the auricles. That knowledge has been gained directly and exclusively from animal experimentation conducted side by side with clinical observation. Without such experiment we could have gathered no true conception of the events of the heart. This discovery has explained a multitude of obscure phenomena, it will continue, if I mistake not, to shed light upon the pathology of heart disease for many years to come. When the auricles pass into fibrillation they cease to beat and their walls, standing in a position of diastole, exhibit small flickering tremulous movements, which are the expression of incoordinate activity. Their function of propelling blood to the ventricles is lost; they no longer serve as reservoirs while the ventricle is contracted; the blood stagnates perpetually in them, the formation of muscle clots is promoted; heart murmurs become altered; such activity as the auricle possesses is expressed in a malignant fashion, it lashes the ventricle to a quick and disordered movement, exposing any weakness of the ventricular muscle, if such exists, for the muscle cries out against the increased strain. The arterial blood pressure sinks, venous pressure rises; the onset of this condition is the most important contributing cause of cardiac failure of which we have real knowledge. It was the electrocardiograph which first bore clear witness of its occurrence in the human subject. . . . What its isolation means to us may be grasped when its prognostic significance is appreciated, and when its almost specific reaction to drugs of the digitalis group is realized. It is from the reaction of the heart, affected in this fashion that digitalis owes its wide reputation; it is in these cases that it grips the heart and gives the slowing of pulse rate which relieves an exhausted muscle. We will see patients in whom, occurring as a temporary disorder, it promotes acute dilatation of the heart and you will hear the term "dilatation" applied as the diagnosis in the case. It is but recently that we have appreciated that the fibrillation is the cause of the disturbance, and that the irregularity is not the sequel of distension of the heart. You will meet cases in which, as a fleeting and recurring disorder, it promotes constant palpitation or even temporary loss of consciousness. You will meet it daily in your work as an associate and chief promoter of chronic heart failure. You will recognize it clinically because of this frequent association, because it is the only common irregularity which consorts with rapid heart action, because the ventricular beating is tumultuous and never constant from moment to moment. The ability to recognize it is a prime asset today in dealing with grave cardiac affections."

The picture thus drawn by one of the greatest living cardiologists, leaves nothing unsaid; it is the last word in the interpretation of clinical manifestations often presented by the fibrillating auricle.

The prognosis of auricular fibrillation should, for obvious reasons, be extremely guarded. The question of its exact cause is so involved that prognostic opinions must, for the present at least, remain largely speculative. There is one fact bearing upon the prognosis, however, which seems to be settled: auricular fibrillation is always evidence of serious myocardial damage. When we consider that this condition of fibrillation is often engrafted on insidious and obscure pathological processes, themselves productive of cardiac dilatation, valvular lesions, renal disease, arteriosclerosis and the like, we cannot fail to realize the importance of prognostic conservatism. The gravity of any cardiac lesion is enhanced by the development of auricular fibrillation, because there can be no doubt that it loads an already defective myocardium with an extended and appreciable burden. "In most cases," says Lewis, "it heralds cardiac failure, temporary or terminal, so that few patients survive its onset for more than ten years." He admits that there are exceptions to this rule but insists that they are few. On this point McKenzie cites the interesting case of a member of our own profession who at the age of 50 years ran rapidly for two hundred yards and was then seized with an attack of auricular fibrillation which lasted for two hours. This was ten years ago, says the author, and the physician is still well and engaged in the active practice of his profession. Experience has demonstrated, however, that these attacks which terminate quickly are apt to recur with increasing frequency until the condition becomes a permanent one.

In attempting a prognosis in this condition there are two special points which may help us: one of these is the rate of ventricular action and the other is the heart's ability to react to treatment. A persistent ventricular rate of 120 or over is of serious omen and according as the rate is maintained above that count so the outlook becomes graver. If the condition reacts to the use of cardiac drugs, and especially if a low pulse rate can be maintained without their administration, the prognosis thereby becomes favorable, but, while it is true that auricular fibrillation in a certain proportion of cases assumes a paroxysmal type, most hearts which develop it maintain this mechanism to the end of the chapter.

Some recent observers have insisted that in the treatment of these cases we are in the habit of stopping the administration of digitalis too soon; that it should be given for a long period after acute failure has been controlled and they have concluded that so long as that drug maintains the heart's action at a low rate, the presence of persistent ventricular irregularity has little or no bearing on the gravity of the prognosis. I cannot concur in such a conclusion nor do I believe it will bear final analysis. While it is reasonable to suppose that the return of acute failure may, to some extent, be prevented or delayed by a more prolonged administration of digitalis, our present knowledge does not seem to warrant the statement that pulse irregularity in auricular fibrillation, even when the heart is kept down to 70, is without prognostic significance. Indeed the contrary must be true because if in spite of the continued administration of digitalis the irregularity persists, it is proof conclusive that the condition of fibrillation under observation is an obstinate one and that fact in itself increases the gravity of the prognosis.

The treatment of auricular fibrillation consists of the proper management and control of its symptoms by the skilful use of digitalis. There is no pathological condition with which I am familiar that responds more satisfactorily to intelligent treatment than does the fibrillating auricle, especially when it occurs in those patients who give rheumatic histories. It yields, as a rule, quite as readily to the careful administration of digitalis as does specific disease to mercury and the iodides, acute gout to the acetic extract of colchicum, or malarial infection to quinine. Indeed it is now pretty well understood that when digitalis promptly and satisfactorily disposes of cardiac irregularity it is because the drug is dealing with the fibrillating auricle, and, that it is owing to its action in that condition that digitalis has gained its great reputation. The diagnosis of auricular fibrillation once established, the remedy is plainly indicated and the guide for its administration is the rate of the heart beat. Whenever that exceeds 100 while the patient is at rest, 10 or 15 minims of a reliable tincture of digitalis, or a dram to a dram and a half of the freshly prepared infusion should be given three or four times daily. If the symptoms do not yield within four or five days the dosage may be increased until retardation of the pulse is obtained, unless there is nausea, diarrhoea, headache or other toxic effects of the drug. If these toxic symptoms persist for several days the dose of digitalis must be reduced or temporarily omitted whether the pulse rate has fallen or not. In the ordinary case, when the pulse falls to between 60 and 80 per minute the use of digitalis should be discontinued, not to be resorted to again unless there is further pulse acceleration. In most instances, where the patient has properly reacted and the pulse rate in consequence has been reduced to 70 per minute, the use of the drug may be stopped without much fear of a recurrence of the accelerated rate. If, however, upon the patient's rising from bed, the pulse becomes slightly accelerated, the rate can usually be kept down by the administration, three times a day, of five minim doses of the tincture of digitalis. In some cases these minimum doses do not result satisfactorily and the use of larger doses must be resorted to. The appearance of coupled heart beats is always a sign of danger. Whenever they are observed the digitalis must be discarded. The question naturally arises whether these patients shall invariably be put to bed. It does not follow that because a patient is suffering from auricular fibrillation he must be laid up. But where his heart rate exceeds 100 per minute it is advisable, and I am convinced that he should remain in bed until his general and cardiac condition, and his reaction to digitalis have been thoroughly investigated. A good and safe procedure in such cases is to remedy, if possible, any contributing circumstances that may aggravate the inefficiency, and then carefully to give the patient digitalis until the pulse rate is reduced. If the failure is of some severity, he should be kept in bed until the proper effect of the drug is obtained when he may be permitted to go about his affairs.

There are a few of these patients who are peculiarly susceptible to the toxic effects of digitalis. They cannot take it in doses sufficiently large to control the heart beat without experiencing nausea or other discomforting symptoms. Under such circumstances either squills or strophanthus may be tried in ten minim doses of the tinctures, or if necessary recourse may be had to the intravenous injection of *strophanthin.*

In a case of fibrillation where the heart beats persistently at a high rate, 170 to 200 per minute, the condition is very urgent and heavy doses of digitalis should be employed, double the usual dose, or a reliable preparation should be given hypodermically. The intravenous injection of strophanthin is also valuable at such times; two or three doses of 1/250th of a grain each in 40 to 60 minims of normal salt solution may be given at intervals of two hours. The reduction of the heart rate following this is almost immediate, the pulse coming down to 90 or 80 in six to twelve hours. This remedy should, however, be employed cautiously and its adoption confined to the urgent cases which belong to the rheumatic group, or to similar cases in which medication by mouth is prevented by the onset of gastro-intestinal symptoms.

Patients suffering from auricular fibrillation should live regular and temperate lives, avoiding strenuous games and heavy manual labor, and women patients should be warned of the danger of pregnancy.

Owing to the fact that belladonna and hyoscyamus, or their alkaloids, have the effect of increasing the ventricular rate, these drugs should never be administered in auricular fibrillation.

To conclude; by the judicious use of digitalis the peril of death may rapidly be removed, the distressing symptoms attending failure of the heart relieved, the patient restored to a condition of comparative health, his life prolonged and his occupation resumed. In auricular fibrillation this drug acts as a specific. But it should be understood that its action, in this condition of fibrillation is not that of contracting a dilated ventricle the seat of myocardial change, that it has nothing to do with so-called back pressure, decompensation, or other reputed causes of cardiac failure, but that its action in these cases depends upon its ability to impede the passage through the nodal system, from auricle to ventricle, of the haphazard, pathological impulses and turmoil originating in a confused, tremulous and paralyzed auricle.

## BIBLIOGRAPHY.

Lewis, Thomas, "Clinical Diagnosis of the Heart Beat."
Lewis, Thomas. "Lectures on the Heart."
Ritchie, W. T., "Auricular Flutter."
Starling, Ernest H., "Human Physiology."
Hirschfelder, Arthur D., "Diseases of the Heart and Aorta."
McKenzie, James, "Diseases of the Heart."
Cowan, John, "Diseases of the Heart."
Gray, Henry, "Anatomy English Edition," Howden.
Morison, Alexander, "The Sensory and Motor Diseases of the Heart."

## DISCUSSION (with lantern slide demonstration).

*Marcus A. Rothschild, M.D.,*
of Manhattan.

Dr. Rothschild demonstrated by means of lantern slides the normal topography of the sino-auricular node in the human heart and the finer structure of the node. He pointed out the rich nerve supply of the node and the nodal artery. He next showed the right branch of the bundle of His as it appears in the reindeer's heart. The bundle, in this animal, is an encapsulated structure and is composed of nodal tissue with large numbers of nerve fibrillae and ganglion cells. By means of a special stain, Dr. Rothschild demonstrated the intricate network of the Purkinje fiber in the dog's heart. It was shown that practically the entire ventricle is covered by a delicate network of interlacing delicate fibrillae whose functions are to transmit the impulse to the entire ventricle, practically simultaneously. The principle of this new stain is based on the previous work of Berblinger and Nagayo who demonstrated that the Purkinje fibers are rich in glycogen. It was thought by increasing the glycogen content of these fibers, that a simple method could be found to demonstrate them. Accordingly solutions of glucose were injected intravenously into dogs and at the end of a definite period of time the animals were killed, their hearts quickly fixed in a saturated 40 per cent solution of formalin with dextrose and then stained according to the method of Best for glycogen. Macroscopically the Purkinje fibers stand out as delicate red interlacing strands lying beneath the endocardium. The right and left branches at the bundle can be distinctly seen. Dr. Rothschild demonstrated the right branch of the bundle stained according to this method. It is not necessary to cut sections of these hearts. All that is needed is to strip the endocardium away from its underlying musculature. The strips are cleared with the ordinary methods and mounted in balsam.

Dr. Rothschild next demonstrated the Purkinje network in the human heart stained by the above method. The patient, who died at Mount Sinai Hospital from suppurative pancreatitis, developed a marked hyperglycemia. There was no glycosuria. Thus, in the human heart, we have conditions identical with those produced experimentally in the dog's heart. The Purkinje network was shown to be as delicate and as extensive as that demonstrated in experimental animals. By this method only, in the human and dog's heart can one get even an approximate idea of the extensive and elaborate system known as the Purkinje fibers.

Dr. Cruikshank has so fully described the type of pulse, its significance, its prognostic value and the method of treatment of auricular fibrillation, that there is very little to add to his communication. However, Dr. Rothschild demonstrated electrocardiographic and polygraphic tracings of cases of auricular fibrillation as well as experimental curves of this condition. He also showed the effect of digitalis treatment in these cases. A patient under observation with a rapid pulse rate of 120 and a ventricular rate of 160, thus showing a pulse deficit of 40, under digitalis medication lost this pulse deficit and the rate fell to 84. The action of digitalis in these cases does not affect the fibrillating auricle. The drug only serves to depress the activity of the conducting tissue, limiting the number of impulses which reach the ventricle from the auricle. In treating cases of auricular fibrillation with digitalis certain definite rules should be followed. Because an auricle is fibrillating does not necessarily imply that digitalis is indicated. A patient having a pulse rate over 100 should receive digitalis medication. When the rate falls between 60 and 70, the medication should be discontinued. If the patient develops a bigeminy even before the reduced rate is reached we have the beginning of toxic symptoms. Occasionally we get peculiar and irregular reactions of the heart to digitalis medication. In old atherosclerotic individuals the administration of the drug frequently has no effect. In these cases strophanthin, and occasionally, squills are of value. In other cases we do not find a bigeminy but an irregular type of heart block, with extremely long pauses is noticed. The drug should then be administered with extreme caution and its administration discontinued when this peculiar reaction is positively noted. The condition of auricular fibrillation is extremely easy to diagnose by means of our present graphic instruments, and the clinician, who has not these facilities at his disposal can make an accurate diagnosis, in the vast majority of cases, on the basis of the physical phenomena presented. From a clinical point of view one can divide the cases of auricular fibrillation into two large groups: those cases occurring in young individuals and those occurring in people over forty years of age. The etiological factor in the first group is always some infectious disease, usually rheumatism. These cases generally have some valvular defect, usually mitral stenosis. In the second group of cases we have to deal with the atherosclerotic individual with or without a valvular defect. Those of the first group are quite amenable to treatment but those of the second group are most difficult to treat. An irregular pulse of 120 to 160 is usually due to a fibrillating auricle. The usual forms of paroxysmal tachycardia or simple tachycardia are regular. The rate in cases of paroxysmal tachycardia is not materially affected by exercise or change of posture. In simple tachycardia rest will cause a marked decrease in rate. The respiratory arhythmia bears a definite relation to respiratory changes, and hence can easily be differentiated. In auricular fibrillation change of posture or exercise remarkably increases the rate of the pulse. There is present a pulse deficit, that is, many of the ventricle contractions fail to reach the radial pulse. One should always bear in mind that the radial pulse is only an index of activity in the ventricle and from the radial pulse one gets no real idea of what is happening in the auricle except by deductive reasoning. The only means we have of determining the activity of the auricle are, first, electrocardiographs; and second, venous polygraphic tracings. Patients showing this pulse deficit are usually those having a fibrillating auricle.

Blood pressure determinations are of great value in diagnosing auricular fibrillations. As has been noted by the demonstrative tracings, no two beats of the radial pulse are of the same size or duration of time. The blood pressure hence shows rapid and repeated changes. In one case demonstrated here this evening the blood pressure varied in five minutes from 90 to 130 millimeters of mercury. Practically in no type of irregularity are such rapid and extreme systolic variations of pressure noted.

As regards treatment in these cases, instrumental means of control of the treatment is of extreme value. When can one say a heart has sufficient digitalis? Is the rate alone a sufficient index? How frequently do we miss bigeminies? The onset of this condition is a danger signal and when it appears the drug should, in all cases, be discontinued. According to the recent work of Cohn, the inversion of the T-wave in the electrocardiogram shows the action of digitalis on the heart. We have here an extremely accurate means of determining whether our administration of digitalis is affecting the heart or whether a patient under observation has had previous digitalis medication. Only by combining accurate clinical observations with the more recent advancement in instrumental examinations of the defects of mechanism in our cardiac patients can we develop a logical and physiological method of treatment.

# CAUSES AND PREVENTION OF INSANITY.(1)

A. J. Rosanoff, M.D.,

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DURING the past ten or twelve years a clearer knowledge has been gained of the causes of insanity. Formerly it was believed that these causes were so numerous and their manner of action so complicated that in a given case it would not be possible to determine accurately the parts played by the various known and unknown pathogenic factors in the production of the mental breakdown. To-day, though this belief is still held to a certain extent, we are nevertheless able to distinguish amongst the many causes some few that are *essential* from others that are merely *incidental* or *contributing*.

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(1) Read before the Suffolk County Medical Society, May 7, 1915.

The causes in the latter group are indeed remarkable for multiplicity and complexity; one might almost say that they are as many as there are individual cases and that in no two cases is their manner of action exactly alike. In themselves, however, they do not suffice to produce insanity: they acquire pathogenicity only in the presence of an essential cause.

When, for instance, we find it stated in statistical reports published by institutions that a certain number of cases of mental disorder have been caused by childbirth, business reverses, death of relatives, unhappy love affairs, domestic infelicity, etc., it is obvious that we cannot assume that these causes are under all conditions capable of producing a mental breakdown.

It is useful to know these causes because it is probably true that even in the presence of an essential cause a serious mental attack may be prevented in some cases by avoidance of exposure to the additional influence of an incidental or contributing cause; but such mental hygiene is only palliative, and were it ever so successful it would but postpone the radical dealing with the problem of prevention of insanity, which can only be by the elimination of the essential causes.

The most important essential causes, those which constitute the basis upon which the great majority of cases of insanity develop, are *heredity, alcoholism,* and *syphilis.*

The fact that nervous and mental diseases are often transmitted by *heredity* was known to Hippocrates and has since his time been amply illustrated by insane hospital statistics, but the exact conditions under which such transmission occurs have never been fully understood. Especially perplexing was the seeming irregularity in the working of heredity as presented, on the one hand, in the facts of atavistic and collateral heredity, and on the other hand, in the frequent failure of transmission of neuropathic traits. A recent investigation has, however, revealed some data which seem to indicate that some forms of insanity are transmitted from parent to offspring in the manner of a trait which is, in the Mendelian sense, recessive to the normal condition.(1) Table I shows the actual findings recorded in the investigation here referred to; these findings, it will be observed, are in close correspondence with theoretical expectation, which is as follows:

1. Both parents being neuropathic, all children will be neuropathic.
2. One parent being normal, but with the neuropathic taint from one grandparent, and the other parent being neuropathic, half the children will be neuropathic and half will be normal, but capable of transmitting the neuropathic make-up to their progeny.
3. One parent being normal and of pure normal ancestry, and the other parent being neuropathic, all the children will be normal but capable of transmitting the neuropathic make-up to their progeny.
4. Both parents being normal, but each with the neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.
5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the

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(1) Rosanoff and Orr. *A Study of Heredity in Insanity in the Light of the Mendelian Theory. Amer. Journ. of Insanity,* October, 1911.

children will be normal; half of them will be capable and half not capable of transmitting the neuropathic make-up to their progeny.

6. Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

TABLE I

| TYPES OF MATING | Number of Matings | Total Number of Offspring | Died in Childhood | Data Unascertained | Neuropathic Offspring | | Normal Offspring | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Actual Findings | Theoretical Expectation | Actual Findings | Theoretical Expectation |
| 1. RRxRR=RR | 17 | 75 | 11 | 0 | 54 | 64 | 10 | 0 |
| 2. DRxRR=DR+RR | 93 | 500 | 66 | 5 | 190 | 214½ | 239 | 214½ |
| 3. DDxRR=DR | 14 | 61 | 13 | 3 | 0 | 0 | 45 | 45 |
| 4. DRxDR=DD+2DR+RR | 62 | 369 | 44 | 3 | 107 | 80½ | 215 | 241½ |
| 5. DDxDR=DD+DR | 20 | 92 | 12 | 3 | 0 | 0 | 77 | 77 |
| 6. DDxDD=DD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 206 | 1097 | 146 | 14 | 351 | 359 | 586 | 578 |

D—Dominant. R—Recessive.

RR—Neuropathic subject (nulliplex inheritance).

DR—Normal subject with neuropathic taint from one parent (simplex inheritance).

DD—Normal subject of pure normal ancestry (duplex inheritance).

The more important psychoses which develop on a hereditary basis are involution melancholia, dementia praecox, paranoic conditions, manic-depressive insanity, epileptic insanity, the psychoneuroses, constitutional inferiorities, insanity associated with imbecility, and allied conditions. Of 7,664 cases admitted to the New York state hospitals for the insane during the fiscal year ending September 30, 1913, 3,326 or 43.4 per cent belonged to these groups. (1)

As regards *alcoholism,* the most trustworthy experimental data seem to indicate that even moderate doses of alcohol impair both physical and mental efficiency, and that such doses, if repeated daily, have a cumulative effect.

In 1903, Dr. L. Schneider, (2) of Switzerland, carried out a series of experiments to determine the effect of moderate doses of alcohol upon muscular work. At about the same time Dr. A. F. Hellsten, (3) of Sweden, carried out a similar series of experiments. Muscle efficiency was measured in the laboratory by means of an ergograph after the ingestion of alcohol and compared with the efficiency shown by the same subjects without alcohol.

Both observers, working independently, were led by their results to formulate the same conclusion, which may be stated as follows: The effect of alcohol is twofold, as a food and as a poison, producing at first a rise in muscular efficiency, and in about fifteen minutes the beginning of a rapid and progressive decline, the net result being a loss amounting to about 8 per cent.

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(1) Twenty-fifth Annual Report of the State Hospital Commission.
(2) *Pflueger's Archiv fuer die gesamte Physiologie,* vol. xciii, p. 451.
(3) Abstracted in *Muenchener medicinische Wochenschrift,* 1904, p. 1894.

In 1900, Dr. E. Kuerz, in collaboration with Professor E. Kraepelin, ($^1$) instituted a series of experiments with a view to determining the effect of alcohol upon simple mental processes, such as are involved in additions of one place numbers, free association of ideas, and memorizing numbers.

The general result was a reduction in the efficiency of these processes, varying in degree from 3 to 27 per cent. These experiments revealed the further fact that the influence of a dose of alcohol lasts longer than twenty-four hours, so that doses taken daily produce a gradually increasing cumulative effect; yet the doses administered in these experiments were moderate, such as are usually considered entirely harmless, certainly far from enough to produce a state of actual drunkenness.

Similar experiments had already been carried out, four years previously, by Dr. A. Smith, ($^2$) with similar results.

Turning to clinical data, we find that during the fiscal year ending September 30, 1913, 13.5 per cent of all male admissions and 4.2 per cent of all female admissions to the New York State hospitals for the insane, ($^3$) were cases of alcoholic psychoses, not including cases which are not specifically alcoholic but in which intemperance was given as a contributing cause.

The more important psychoses which develop on a basis of alcoholism as an essential cause are grouped under the following headings according to the classification adopted for official use in the New York state hospital service: pathologic intoxication (convulsive drunkenness, maniacal drunkenness, delusional drunkenness, etc.), alcoholic deterioration, delirium tremens, Korsakow's disease (polyneuritic psychosis), acute hallucinosis, chronic hallucinatory type, and paranoid states.

In order to be able to deal properly with the problem of prevention, an answer must be sought to a question as yet not touched upon: Why do some persons drink alcohol in injurious quantities?

The general view is that initiation into habits of intemperance occurs as a result of convivial customs or through bad associations, and that in such ways a craving is established which leads to the development of chronic alcoholism. This is the truth, but not the whole truth; for in the midst of the same social conditions, favorable or unfavorable, it is as certain that some persons will become alcoholic as it is that others will not. The difference is between the persons.

During the fiscal year ending September 30, 1914, 56 cases of alcoholic psychoses were admitted to the Kings Park State Hospital; in 18 of these data concerning heredity and mental make-up of the patients were unascertained; of the remaining 38 cases no less than 31 presented either a neuropathic family history, or an originally inferior mental make-up, or both; and only 7 gave a negative personal and family history.

The conditions under which such hospital statistics are compiled as a rule give rise to error in but one direction, namely, in the direction of omitting pertinent facts of family or personal history; thus tending to lead to an underestimation of the case from this point of view. Considering this, the remarkable showing of the figures must

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(1) *Kraepelin's Psychologische Arbeiten*, vol. iii, p. 417.

(2) *Br. ueber d. V. intern. Kongr. z. Bekaempf. d. Missbr. geist. Getraenke*, Basel, 1896, p. 341.

(3) Twenty-fifth Annual Report of the State Hospital Commission.

give one the feeling that the tendency to drink alcohol in amounts sufficient to produce insanity is largely a neuropathic manifestation.

A careful study of this subject, made by Dr. D. Heron (1) and published recently from the Galton Laboratory of Eugenics at the University of London, has yielded a similar conclusion: "We are on fairly safe ground in asserting that the relationship between inebriety and mental defect is about .76. We have thus reached a definite measure of a relationship on which every authority on alcoholism has laid the greatest possible stress." "On the one hand, mental condition is usually regarded as being directly affected by alcoholic excess, and on the other hand the extent of the individual's education is very largely determined by causes which are pre-alcoholic; yet we find here that there is a close relationship between the two characters, and this is strongly in favor of the view that the defective mental condition of these inebriates, like the extent of their education, is pre-alcoholic and that the alcoholism flows from a pre-existing mental defect, not the mental defect from the alcoholism." "All this lends support to the view that the mental defect of the inebriate is not an actual growth; it is born, not bred; that 'inebriety is more an incident in the life of the inebriate than the cause of his mental defect.'"

As regards *syphilis*, it appears as the essential cause of all cases of cerebral syphilis (gummata, meningitides, etc.), general paresis, and of a large proportion of the cases of cerebral arteriosclerosis. Not counting cases of the latter condition, which are not always of syphilitic origin, 19.4 per cent of all male first admissions and 7.0 per cent of all female first admissions to the New York State hospitals during the fiscal year ending September 30, 1913, (2) occurred on the basis of syphilis.

Syphilitic infection, as is well known, may be of non-venereal as well as of venereal origin. Thus, of 887 cases reported by Fournier, (3) 45 were of non-venereal origin, among these being cases of inherited syphilis, of infection of wet-nurses by sucklings, midwives by women in labor, etc. Of the cases of venereal origin, not all result from immoral relations. Thus Fournier (4) estimates that of all cases in women the infection in 19 per cent is acquired by married women from their husbands. But even in cases in which the infection is acquired innocently, it can usually be traced indirectly to immoral sexual relations, particularly to prostitution, as its original source.

The prevention of syphilis and with it of psychoses of syphilitic origin is, therefore, closely linked to the prevention or control of prostitution.

To what extent can prostitution be controlled?

First of all, it must be noted that at no time has any state or nation as yet succeeded in abolishing prostitution, and as late as 1902 a Committee of Fifteen, organized in New York for the purpose of investigating the social evil, were lead in their report to express the view that the summary extirpation of prostitution "in the present state of the moral evolution of the race, is as yet impossible." (5)

Since that time, however, important additions have been made as an essential cause.

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(1) Eugenics Laboratory Memoirs, xvii: *A Second Study of Extreme Alcoholism in Adults.* London, 1912.

(2) Twenty-fifth Annual Report of the State Hospital Commission.

(3) Fournier. *The treatment and Prophylaxis of Syphilis.* English translation by C. F. Marshall. New York, 1907. P. 348.

(4) *Loc. cit.*, p. 351.

(5) *The Social Evil.* New York, 1902. (G. P. Putnam's Sons) p. 178.

to our knowledge of prostitution, so that to-day the case no longer seems so hopeless. The most significant contribution consists in the discovery of the close relationship existing between prostitution and feeble-mindedness and other mental disorders.

This relationship has been carefully studied by a special commission created for that purpose by an act of the House of Representatives of the State of Massachusetts. (1) We would quote the following from their highly interesting official report: "The women examined were in three groups: young girls under sentence in the State Industrial School for Girls, the House of Refuge, and the Welcome House; those just arrested and awaiting trial in the Suffolk House of Detention in Boston; women serving sentence in the State Reformatory for Women, the Suffolk County Jail, and the Suffolk House of Correction.

"These three groups represent the young girls who have just begun prostitution, the women plying their trade on the streets at the present time and the women who are old offenders. The houses of prostitution, lodging houses, hotels and cafés named by these women as the places where they plied their trade are the same as those noted by the field investigators employed by the commission.

"The Binet tests were applied to 289 of the 300 women examined, and other psychological tests were used in doubtful cases.

"Of the 300 prostitutes, 154, or 51 per cent, were feeble-minded and 11, or 3 per cent, were insane. All doubtful cases were recorded as normal. The mental defect of these 154 women was so pronounced and evident as to warrant the legal commitment of each one as a feeble-minded person or as a defective delinquent. At the Massachusetts School for the Feeble-Minded there are an equal number of women and girl inmates, medically and legally certified as feeble-minded, who are of equal or superior mental capacity.

"The 135 women designated as normal as a class were of distinctly inferior intelligence. More time for study of these women, more complete histories of their life in the community and opportunity for more elaborate psychological tests might verify the belief that many of them also were feeble-minded or insane.

"Some of the women seen at the Detention House were so under the influence of drugs or alcohol as to make it impossible to study their mental condition. Others at the Detention House and in the prisons had used alcohol to excess for years, and in the time available it was impossible to differentiate between alcoholic deterioration and mental defect. These drunken, alcoholic and drug-stupefied women were all recorded as normal.

"Of the 135 women rated as normal, only a few ever read a newspaper or a book, or had any real knowledge of current events, or could converse intelligently upon any but the most trivial subjects. Not more than six of the entire number seemed to have really good minds.

"It has long been held that prostitution always has existed and always will exist, and that all remedies will be ineffective and of no avail, because it represents a variation of the most fundamental human instinct.

"Recent studies of prostitution and prostitutes in other cities, states and countries, and, in connection with this investigation, the study and analysis of 300 prostitutes individually examined for the commission, the observation of prostitutes and prostitution, and of the immoral young girls who have not entered prostitution in cities and towns all over the State, have convinced the commission that this evil is susceptible of successful attack and treatment. The fact that one-half of the women examined were actually feeble-minded clears the way for successful treatment for this portion of this class. The mental status of the prostitutes under arrest should be determined, and such of them as are found to be feeble-minded or defective delinquents should be placed under custodial treatment. Thus would these women themselves be saved from an evil fate, pimps and procurers would lose their willing prey, and a non-self-supporting class who find in prostitution their only way of earning a living would be taken out of the community.

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(1) Report of the Commission for the Investigation of the White Slave Traffic, so-called. February, 1914. House, No. 2281, State of Massachusetts.

"The recognition of feeble-minded girls at an early age in the public schools, and proper provision for their protection in the community or custodial care in an institution, would prevent much of the observed immorality among young girls and the resulting temptations to boys. Precocious sex interests and practices are well-known symptoms of feeble-mindedness."

The situation, then, may be summarized as follows: at least three-fourths of all cases of insanity occur on the basis of bad heredity, alcoholism, or syphilis; an individual who is of normal ancestry, abstains from alcohol and remains free from syphilitic infection is not seriously threatened with mental alienation. But since alcoholism and syphilis are, in their turn, so generally connected either directly or indirectly with inherent mental defectiveness, it follows that heredity is, as long taught with characteristic clearness of thought and diction by the French school of psychiatry, the cause of causes of mental alienation.

It may safely be said, therefore, that *a movement for the prevention of insanity will lead the race in no mistaken path if it concentrates the bulk of its energies on the problem of bad heredity.*

The means that have been suggested for combating bad heredity are legal restriction of marriage, surgical sterilization, and segregation. This would, perhaps, hardly be the place for a full discussion of the advantages and disadvantages of all these measures; nor is it to be assumed that any one of them is to be adopted necessarily to the complete exclusion of the others. Suffice it to say here that the main drawback of marriage laws in this connection is their ineffectiveness; and that to sterilization there are moral, religious, legal, and even scientific objections which render it largely unacceptable to public opinion. On the other hand, segregation, though also opposed by some, is evidently much more generally acceptable, as is shown by the fact that, quite independently of any consciously eugenic movement, its practice has made great headway during the past several decades. Thus, in 1880, there were, according to the United States census, 81.6 patients in institutions for the insane per 100,000 of the general population; and in 1910 that number had risen to 204.2.

The statistics for the whole country at any one time show that the policy of segregation is not pursued with equal thoroughness in all states. In 1910, for instance, there were in the state of Oklahoma 67.0 patients in institutions per 100,000 of the general population; while in the state of Massachusetts there were 344.6; and between these extremes all degrees of transition were presented by the statistics of other states.

We may conclude, therefore, that, unlike other eugenic measures that have been proposed, segregation is an old practice which has been tried out everywhere and to which no effective objections have been raised either on religious, or legal, or humanitarian grounds; it has had of late a remarkable growth; and it may be anticipated that improvement of methods of financing, on the principle of bond issues for construction and legislative appropriations only for current expenses of maintenance, will create vast possibilities of further growth.

The fact, however, of segregation being acceptable to public opinion would be in itself insufficient to recommend it without qualification or reservation as an eugenic measure; its efficacy must, if possible, be demonstrated. Having been practiced more or less extensively throughout the country for at least two or three generations, it should by this time have produced some noticeable effect in the direction of a reduction in the incidence of insanity. The question here is not whether the relative number of insane persons in institutions has increased during the past several decades; we know that it has increased, and we know equally well that this increase is largely, if not wholly, accounted for by the general improvement in the kind and adequacy of facilities for the care of such patients. The question is, rather, whether the number of insane persons both in and out of institutions in relation to the general population has increased, or remained stationary, or become reduced.

Attempts have been repeatedly made to enumerate the total number of insane persons both in and out of institutions in the various states. (1) The resulting data were, however, so manifestly untrustworthy that eventually it became apparent that the difficulties inherent in such an undertaking were greater than, for the present, we can cope with successfully; and such attempts have, accordingly, been given up.

Of these difficulties the greatest, and perhaps the sole insurmountable one is that of formulating such a definition of insanity as would enable enumerators to readily and uniformly distinguish between sane and insane persons under all conditions.

Recently a method has been devised by which a comparison of certain parts of the country with one another can be made as regards the relative incidence of insanity, without involving the necessity of formulating a definition of insanity or a standard of normality. (2) This method may be of assistance in seeking an answer to the question before us: Does segregation have an appreciable effect in the direction of reducing the incidence of insanity?

The states east of the Mississippi River may be divided into a northern group, comprising Connecticut, Illinois, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont and Wisconsin; and a southern group, comprising Alabama, Delaware, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia.

Facilities for the care of the insane have at all times been relatively more ample in the northern group of states, and, accordingly, the number of patients in institutions in relation to the general population has always been greater in that group, as shown in Table II.

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(1) U. S. Census from 1850 to 1890.

(2) A. J. Rosanoff. *Is Insanity on the Increase? Journ. of the Amer. Med. Ass'n.*, July 24, 1915.

*Table II, showing number of insane in institutions per 100,000 of the general population in certain years in two groups of states east of the Mississippi River.*

TABLE II

| | CENSUS YEARS | | | |
|---|---|---|---|---|
| | 1880 | 1890 | 1904 | 1910 |
| Northern group | 104.9 | 145.1 | 230.7 | 256.6 |
| Southern group | 48.8 | 79.7 | 117.5 | 132.3 |

After many years of a thus prevailing contrast in the thoroughness with which the policy of segregation has been pursued in the two groups of states, is there now to be demonstrated a difference between their populations in incidence of insanity? From what has been said above concerning the great difficulty of defining insanity and enumerating correctly all cases of it in the population, it will be judged that the question, thus expressed, is hardly an answerable one. It may better be expressed as follows: If the populations of the two groups of states, or representative portions of them, were exposed to the same environmental conditions, would there still be a difference between them as to the proportion of patients contributed to insane hospitals; and if so, which group would contribute the higher proportion and how great would be the difference?

A number of circumstances, such as availability of good statistics, the prevalence of high social standards, the composition of the population which is in certain respects peculiar, etc., combine to make the experience of the state of California worthy of special study in this connection.

The growth of the population of that state has for a number of decades been in large part by immigration from other states, especially those east of the Mississippi River. This fact has created an opportunity of making a comparison, such as we desire to make, by noting the number of admissions contributed, respectively, by natives of the above mentioned two groups of states who have taken up their residence in California.

If the incidence of insanity differs materially in these two groups of states, it would seem that the difference should be revealed by this comparison—one that is made on the basis of a standard which, though not to be theoretically formulated, is nevertheless fairly definite, uniform and readily applicable, namely, the standard of the prevailing environmental conditions of California.

During the biennial period ending June 30, 1910, (1) the natives of the northern group of states residing in California furnished 147.3 admissions to the state hospitals of California per 100,000 of their general population. During the same period the natives of the southern group furnished 166.7 admissions per 100,000: an excess of 13.1 per cent as compared with the other.

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(1) Seventh Biennial Report of the State Commission in Lunacy of California.

In other words, as far as may be judged from these statistics, the southern group of states east of the Mississippi River, which have had for years, and still have, poorer and less adequate facilities for the care of their insane, and have in consequence pursued a less thorough policy of segregation than the northern group, now show a higher incidence of insanity in their population.

Accordingly, it seems possible to draw the conclusion that segregation, as an eugenic measure, is not only practicable but also demonstrably effective. Just as the New York State Department of Health is able to say, "Public health is purchasable: within natural limitations any community can determine its own death rate," so we are in a position to proclaim that the time has come for psychiatry to join the new general trend of medicine, to be guided by the new ideal, the ideal of prevention; for we likewise can say, *Mental health is purchasable; the prevalence of mental disorders can be reduced for the coming generations with the aid of dollars and cents spent for segregation in this generation.*

## THE LONG ISLAND COLLEGE-HOSPITAL'S PART IN MEDICAL EDUCATION.*

**O. V. Huffman, M.D.,**

Brooklyn-New York.

As my Alma Mater has just called one of your members to join her faculty and as your Alma Mater has honored me with a place on her faculty, it shows that there is a very friendly spirit of exchange in the air, which makes me forget that I am a newcomer. Indeed, I no longer felt as an outsider, after your President, Dr. Rushmore, so kindly asked me to come here and meet you. I feel that it is a great privilege to speak to you about *our* college.

In recent years we have seen a great advance in the cause of medical education in this country and, as in many movements for the better, it is interesting to note that the things advocated today have been advocated by the leading educators in medicine for centuries. The clinical method of giving instruction and training in medicine has been used by the great masters, off and on, since the middle of the seventeenth century. I say off and on, for there were periods when students were graduated, who talked learnedly of the nature and cure of disease before even having seen a patient. The Long Island College-Hospital occupies an unique place among American medical schools. Its founders not only in name but in deed linked together the theoretical and the practical in giving medical instruction. I love the name College-Hospital. After explaining to strangers just what the College-Hospital is, it is very interesting to hear them exclaim, "Why that is just what is being advocated for medical schools! That they should own and control their own hospitals." If this early recognition of the value of clinical training upon the part of the founders of this College-Hospital should ever interest you further, and, if you have not already done so, I wish that you would read the circular letter sent out, I believe in the year 1857. It sounds exactly like what we have heard in the great forward movement for better medical training that has taken place in the last few years.

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* Address to the Alumni Association of the Long Island College-Hospital in Brooklyn, June 2, 1915.

It is well to take stock of the present situation in view of the many rapid changes that are taking place. The prevailing aim heretofore in American medical schools has been the preparation of men and women for entrance into the medical profession—the practice of medicine. The ideas of what the medical profession is or should be have been various. The history of the origin of the medical profession in this country shows the reason for these various views. If we were to trace the origin of the profession to the small group of M.D.'s in this country in early colonial days, we should make a mistake. In the early colonial days the practice of medicine was carried on by the "chirurgeons" and the barber-surgeons. They dispensed drugs and treated all manner of ills. The early laws recognized them as physicians. It was a very small group of men that had attended lectures at any foreign university, and they were learned men, that is men of scholarly attainments—they had to be for all lectures were in Latin; it was not until 1745 that Edinburgh broke all traditions by permitting some lectures to be given in English. In the colonial days the "chirurgeons" outnumbered the university trained Doctors of Medicine ten to one. These "chirurgeons" received their training by serving as apprentices. It was shortly after all traditions had been upset at Edinburgh University by medical lectures being given in English, that some lectures in England were also given here and there in the colonies and a few years later, in 1751, the first hospital was founded—the Pennsylvania Hospital. By this time six colleges of liberal arts had been established in the colonies. In 1765 the medical department of the College of Philadelphia was founded. It is worth while to look into the character of this first medical school. It was founded chiefly through the zeal of Dr. John Morgan aided by his friend Shippen, who had had a somewhat similar experience. Morgan had been an apprentice-trained "chirurgeon," but while serving as a surgeon in the French and Indian War he found that his training did not measure up to that of the foreign trained surgeons, so he betook himself to Europe where he studied five years under the most celebrated masters. He was finally graduated a Doctor of Medicine by Edinburgh University. While in Europe he worked out all the details of the curriculum for the medical school which he later helped to found. And please note that he talked over his plans not only with great teachers in the universities but also with celebrated independent teachers like the Hunters. The school was patterned after the school in Edinburgh University but with this difference; it required in addition attendance upon the practice of the Pennsylvania Hospital and service as an apprentice to a physician. In other words the school put in practice a new idea, the combination of the good in the European university method of giving purely theoretical training with the best in the English system of giving practical clinical training. The school had high entrance requirements, a very complete curriculum and gave the degree of Bachelor of Medicine to those who successfully passed the examinations at the end of the course, reserving the Doctor's degree for those who pursued their studies further. Now this unique medical school which embodied the very same educational principles of the best American medical schools of today was doomed to meet an early end. With the Revolution came a complete breakdown of all standards. This high standard school was unpopular with the apprentice-trained medical profession. Its property was confiscated and turned over to the University of Pennsylvania and a sort of free for all school, so far as the standards of the faculty and its requirements were concerned, was set up in its place. The high requirements and thorough instruction no longer prevailed. All students were graduated as Doctors, and under the new political conditions following the Revolution and with democratic ideals in full sway all practitioners were called "Doctor" whether granted by a school or only apprentice-trained. By this breaking away from the ideal medical school established by Morgan and Shippen, the cause of medical education in this country suffered throughout the following century. Harvard was the first university to reclaim its medical department and to set about to correct the low standard of medical education, but it was as late as 1871 that it began this good work. But note, it was much earlier than this, in 1860, that the founders of the Long Island College-Hospital brought leaven to the situation by setting up a new type of medical school patterned after the Hospital medical schools of London where special stress is laid upon giving clinical training and bedside instruction. We should be justly proud of the example that these founders set us and of the part the Long Island College-Hospital has taken in improving the methods of teaching medicine and surgery.

Today, so far as ideals are concerned, the leading advocates of changes in our medical schools are upholding the German university ideal. That is, that each department should be thoroughly equipped not only to give thorough up-to-date practical training but to carry on a great amount of research work and to teach fully the philosophy of its particular branch of science. While it is true that a real university should have each department so equipped and so organized that it would attract students, who wish to carry on special work, for instance, to become expert anatomists or expert physiologists or expert pathologists, I am sure that such an university cannot give good all-round training for the undergraduates unless it has a curriculum and teaching force organized on the plan of the original American medical school founded by Morgan and Shippen, and the very same type established later here in Brooklyn. It is the aim of the Long Island College-Hospital to teach its students to observe accurately and to reason soundly, so as to help them acquire the training and knowledge to always be able to keep up with the progress in medical science and to serve humanity. It has the laboratories and the clinical facilities essential to giving such training. It shall need, however, funds and endowment to increase the number of necessary full-time instructors. Students must be taught not only the practice of today, but they must be well grounded in the medical sciences so as to be able to understand and keep abreast of the practice of tomorrow. They must be given some insight into the methods of medical research; this will give them the inquiring mind and lead them to a position of sympathy for and understanding of scientific investigation. To do this it is necessary to have a staff of salaried instructors and assistants.

You will hear it said that the future of medical schools not connected with universities is very black indeed, and that every medical school needs association with a university in order to absorb university ideals. This need not trouble us; the Long Island College-Hospital is part of the University of the State of New York and bears the same relation to the University as the Hospital medical schools in London do to London University. Inasmuch as our requirements are higher than those of the London schools and also of New York University, our College stands on its own merits. As to absorbing ideals, we are nearer to some universities and are more free to visit them than many medical departments of universities are to their own universities. This physical closeness to great centers of learning is a decided advantage.

You will also hear it said that a medical school needs to be connected with a university to recruit a student body. I can understand that this is perfectly true out on the prairies where a medical school has nothing but nature for its environment, but here where we have a tenth of the population of the United States, almost, within a radius of fifty miles we know that this is not true and we know the need which we must fill.

You may hear it said that a medical school will soon meet its fate that is without endowment. This is true, and I am glad to call your attention to the fact that of the eleven medical schools in the State the Long Island College-Hospital ranks third in financial resources. These resources are held in several separate and distinct trusts just as is frequently the case in some of the other best medical schools. The geographical position of our College is the nearest of any medical school to the money mart of the world, almost within a stone's throw of Wall Street; we must make our position still nearer in other ways.

As Alumni of this institution you have much to be proud of and as loyal Alumni you must keep your Alma Mater close to your hearts, and do everything that you can to safeguard her ideals, to increase her usefulness and to insure her future.

## HEALTH AND HOUSING.*

**Benjamin C. Marsh,**
Executive Secretary—New York Congestion Committee.

THE direct connection between housing and heath has been recognized by all physicians. Koch and other tuberculosis experts have shown the relation between tuberculosis and overcrowding and bad housing. It seems evident that the rate varies directly with the density of population or with room crowding.

The economic condition of those living in crowded rooms and areas however is a most important factor.

Housing reform in New York City, as well as in every other American city, has failed primarily because the economic factors have been ignored.

Our Tenement House Law is a great improvement over previous laws, but even under this law, only one room out of four in a six-story tenement house, as ordinarily constructed, is adequately lighted.

The rental for a well-lighted three or four-room apartment in a new tenement house is seldom less than $180.00 a year, often $240.00, within a five-cent fare of centers of employment. In other words, rent for such an apartment takes from a fourth to a third of the average earnings of a semi-skilled workman, from a fifth to over a fourth of the average earnings of skilled workers and of many clerical workers.

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* Read before the Associated Physicians of Long Island, Jan. 30, 1915.

Rent should not take over a sixth of the earnings at most. There are scores of thousands of families in New York, including many in Brooklyn, living in tenement apartments legally "light" physically so dark that they are "unfit for human habitation or occupancy and dangerous to life and health." For such apartments even, high rents can be secured.

So impressed were the English authorities with the seriousness and importance of the housing problem that the English Parliamentary Land Enquiry Committee recently made the following recommendation:

"That it shall be a statutory duty resting upon all local authorities to see that adequate and sanitary housing accommodation is available for the working class population employed or reasonably likely to be permanently resident within their area." The Committee reports however that for the decade 1904 to 1913, "about 99% of the working class houses were supplied by private enterprise."

The Committee makes two further startling recommendations:

(a) That within a short time a minimum wage be paid to all low-paid wage earners.

(b) That unless land values be taxed heavily locally that a national land tax is essential and that the localities be permitted to determine whether they will raise all their local revenue by taxing land values.

In other words, the English Parliamentary Land Enquiry Committee recognizes, as only the official New York City Congestion Committee appointed by Mayor Gaynor recognized in this country, that the housing problem is an economic one and primarily a land problem.

For years the New York Congestion Committee, a private organization, has sought to secure legislation empowering the Tenement House Department to vacate rooms and apartments "so defective in lighting that they are unfit for human habitation."

Last year at the instance of the Tenement House Committee the scope of that bill was enlarged to include apartments "so defective in means of escape in case of fire" as to be similarly dangerous.

The real estate lobby at Albany has killed this merely permissive bill regularly.

Similarly the Congestion Committee, with other organizations such as the Society to Lower Rents and Reduce Taxes on Homes has tried for four years to secure a local referendum on reducing the rates on buildings in New York City to one-half that on land by five equal, annual, consecutive reductions.

The Real Estate lobby, headed by the Allied Real Estate Interests, has killed that measure also.

Efforts will be made this year to secure a referendum on practically untaxing buildings here during the next ten years, the most fundamental housing reform ever proposed in this country, as well as a wise fiscal reform.

At present many old dark-roomed disease-breeding tenements pay only a third to half as much taxes as relatively healthy tenements with a similar number of rooms and commanding only about the same rents. The better the building the higher the taxes, while all economists agree that taxes levied on buildings are passed on to the users while taxes on land values are paid by the owners and reduce their profits.

Land owners in New York City are making a net profit of about $300,000,000 a year. Untaxing buildings would, with our present budget, recover about $52,000,000 more of this sum for the people who create and maintain land values and ground rents. It would reduce rents on an average about a fifth to a sixth; would reduce taxes on small homes $40.00 to $50.00 a year, and would powerfully stimulate the construction of all buildings and other industry.

It is high time that we settle our housing problem in this common sense way instead of merely passing restrictive legislation which sets a high standard but does not bring that standard within the reach of the vast majority of the working people of the city.

Only about one-fourth of the tenants of our city, nine-tenths (nearly) of whom are tenants, live in new-law tenements.

It is true, thanks to the energy of our Health Department and vigorous co-operation by many private agencies, that the death rate of the city has been materially reduced, particularly the death rate of infants.

For several years, however, the death rate from tuberculosis has been practically stationary, as have been those from other housing diseases, *i. e.*, economic diseases. We still have about 27,000 deaths annually from diseases the Board of Health designates as "preventable."

I recently was endorsing, to one of the most prominent economists in the country, Commissioner Goldwater's suggestion that the Department of Health should examine all residents periodically to detect disease early and to prescribe treatment. "The plan is good," he replied, "but at least two-thirds of those who know what treatment they need can't afford to get it." We must exterminate privilege before most people can be healthy.

"Municipal Tenements" are urged by some enthusiasts who believe that the experience of foreign countries justifies this departure in our country.

The writer has visited most of the large cities in England and on the continent which have tried municipal housing. With rare exceptions has it been even a fair success for the insignificant fraction of the population (usually municipal employees) accommodated. It results in putting a premium on slum landlordism, and a heavy burden of taxes on the working classes,—for municipal tenements rarely pay even a non-commercial profit. They rob many poor Peters, not to benefit poorer Pauls but wealthy slum owners. Government must act for one hundred per cent, not for a fraction of one per cent.

To bring healthy housing within the reach of all, we must as a first step transfer taxes now levied on buildings to land values, practically to land speculators, and then enact careful building and tenement house laws.

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## OCTOBER MEETING

of the

## ASSOCIATED PHYSICIANS OF LONG ISLAND.

Notice of this meeting appears on Advertising Page xxv.

# EDITORIAL

## CANCER OF THE STOMACH.

THE importance of early diagnosis and prompt surgical intervention in gastric cancer is so evident as to be almost trite. In a question of the sort, where there is almost perfect agreement upon this premise, it is a matter for surprise that discussion should so constantly recur, and yet every clinician finds the problem constantly before him and its solution not much clearer than during past generations. Dr. J. C. Bloodgood in his Presidential address before the American Gastro-enterological Society has analyzed the matter, basing his observations and conclusions upon 184 cases that have been observed in the Surgical Pathological Laboratory of the Johns Hopkins Hospital during the last twenty-five years.* The series represents a large proportion of cases of gastric cancer occurring in the surgical service of several Baltimore hospitals. It is of interest to note by comparison with these 184 cases that ulcer of the stomach has been observed 132 times. Operable cases were only 49; of the remaining 135 gastroenterostomy was done 44 times; exploratory laparotomy 49 times; 45 cases were not sectioned. This gives 26 per cent of operable cases. Tables are appended from which it appears that before 1905 very few cases received attention; since then the number of cases has quadrupled, but the percentage of operable cases has not varied materially. In other words, more cases have been diagnosticated but diagnosis of the early stages has not materially improved although the number of operable cases has been somewhat larger in the last five years. In estimating the value of symptoms, Dr. Bloodgood has excluded those of questionable and indefinite character and has emphasized as the chief symptom abdominal discomfort in the epigastrium aggravated by eating. His most remarkable finding is that the percentage of operability is about the same in each period of five years, a condition which he explains by the varying susceptibility in different persons to cancerous growth. He favors the conclusion that "many cases of cancer of the stomach arise in lesions of the stomach not originally malignant, most probably ulcer." Possibly the greater number of patients originally sought relief for symptoms of pyloric obstruction. It is interesting to note that in the estimate of duration of the disease before operation, symptoms suggested one month in two cases, six years and more in eight cases and from one-half to one year in forty-eight cases. In twenty-eight cases the duration was two years. The remaining cases are scattered fairly evenly through the intervening time mentioned. The following paragraphs, as representing Dr. Bloodgood's conclusions, may well be quoted in their entirety.

> "This, it seems to me, is the key to the situation. Our adult population must be informed, with the highest authority behind it, that epigastric discomfort aggravated by eating solid food is a sufficient warning. They must be

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* Stomach Carcinoma, Its Medical Aspects. *Journal American Medical Association,* June 19, 1915.

told that such symptoms by no means mean cancer, or disease that may ultimately end in cancer, but that with these warnings they should seek not treatment, but a thorough examination by a competent physician trained in the investigation of gastric diseases. They must be informed that restricted diet and some medicine will often give them relief; but if the disease is cancer, or something that may ultimately be cancer, such relieving treatment will only increase the danger. A thorough examination is the essential thing, and they must know that a thorough examination consists of repeated gastric analyses and the investigation with the fluoroscope or roentgenograms. No other examination will be sufficient.

Persons so educated with this correct information will undoubtedly have the courage to act. The responsibility, then, falls on the physician. I am confident that, after most careful clinical examination, repeated gastric analyses and Roentgen-ray studies, lesions of the stomach which should be subjected to surgery will not be overlooked, and that our comparative figures will show an increasing number of gastric ulcers, an increasing number of gastric ulcers with microscopic changes suggesting early cancer, an increasing number of operable masses in the stomach which are microscopically distinctly cancer, and an increasing number of permanent cures among the latter. With this earlier intervention, the mortality of gastrectomy will decrease."

By way of comparison one may quote from an article by Friedenwald,* who reports 266 cases on which he has operated, none of whom are living. He points out that "patients developing this affection are not as a rule chronic dyspeptics and unless there is a previous gastric ulcer have usually been in good health until the onset of the disease; that this onset is sudden in a large proportion of cases is a fact of great value." Friedenwald analyzes the following symptoms: anorexia, vomiting, pain, hematemeses, melena, occult blood, dysphagia, loss of weight, presence of a palpable tumor, dilatation of the stomach, ascites and edema, X-ray findings, gastric analysis, the Wolff-Junghans test, Abderhalden's and Kelling's methods; and finds that while they are all of positive value in late cancer, except the last two, the inadequacy of our present early diagnostic signs is deplorable.

Granting all that Bloodgood has emphasized, acknowledging freely that surgical intervention in the early stages of cancer is our only means of relief, how are we to meet the problem of how to give practical help to those who are most likely to be benefited—the sufferers who are not yet conscious of the fate that has gripped them? If it be granted that a certain percentage of cancer cases originates in ulcer, then it is evident that early radical interference should be urged in every case of suspected ulcer; but the diagnosis of gastric ulcer often fails in the most expert hands, as it may be simulated by affections of the gall bladder, duodenum, pancreas and appendix, beside other less common conditions. Can we conscientiously affirm to our patient that because we suspect that he may have ulcer of the stomach, he must submit himself to an exploratory laparotomy which may reveal nothing? On the contrary, many cases of gastric ulcer may remain quiescent for years, even decades, and never develop cancer, whereas a large percentage of gastric cancers originate as such and give absolutely no symptoms until obstruction at the pylorus or cardia proclaims them fullblown. There is unquestionably a lack of appreciation not only on the part of the general public, but of a proportion of the medical profession as well, of the importance of regarding all gastrointestinal symptoms as potentially dangerous and a tendency to temporize and procrastinate without resorting to all of the refinements of expert diagnosis, including repeated radiographs and test meals. Unfortunately the economic problem has here to be faced and it will take many years to hammer in the lesson that early and thorough investigation is essential, inadequate as it yet is. While one must acquiesce in the academic soundness of Dr. Bloodgood's theorem that surgical investigation should immediately follow suspicion, it is hardly yet practical. The patient demands, and rightly, that so grave a procedure as an exploratory laparotomy with the physical and economic burdens that ensue must be based upon the reasonable assurance by the physician that it is the only course that the patient may reasonably take. May practitioners of medicine assume this extremely radical stand? Profession and public alike are not yet ready to receive it. The most that we may now urge is the exercise of the utmost diligence and painstaking investigation of every case presenting gastric or intestinal symptoms and a propaganda to educate the general public to the importance of employing expert help in the diagnosis of their stomach troubles, the insidiousness and the frequency of gastric cancer and the dangers that they undertake in treating themselves by home remedies, dyspepsia tablets and the specious nostrums all too widely advertised for the relief of stomach troubles. H. G. W.

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* On the Early Recognition of Cancer of the Stomach. *New York State Journal of Medicine,* July, 1915.

## CATS, DOMESTIC AND OTHERWISE.

WE may be pardoned the doubt whether there is such a thing as a domestic cat. There are moments when we hate every cat; there are always times when we marvel how a cat can be regarded with affection. We know there are people who pretend to love cats and who keep cats about them, who fondle cats, who feed them and pretend to own them. We say "pretend" advisedly, for however much a deluded human being may believe in his or her ownership of a cat, the cat knows otherwise. He is enough of a sycophant to pretend a limited allegiance to and to tolerate the deluded human in whose house he lives and gets his meals, but when the moon is up he throws aside his pretense and comes out in his true character, a devil whose delight is to murder human sleep, to impudently defile human habitation and to render himself a menace to human nerves and human health. We at one time thought that all cats were not thus, but time has shown us that even our neighbor's most cherished tabby is as bold a robber of our garbage pail as any ownerless waif. We have yet to discover whether the unsightly and pungently unpleasant anointment of our parlor windows was suggested by tabby's owner or whether he is like Bourne-Jones the younger when he was taken to task for spitting at his nurse and kicking her shins. He acknowledged that the kicking might have been suggested by the devil, but the spitting was entirely his own idea. The hellish accuracy with which he mimics baby's cry of pain, the fiendish subtlety with which he hides just out of reach, the calculated insolence with which he desecrates the flower bed or window, or even the week's wash, all bespeak a malignant temper which from time immemorial has made the cat, especially the black one, the emblem of all that is sly and underhand and treacherous; and yet he enjoys privileges withheld from any other creature. The dog may be chained up and he cannot climb a fence. It costs you two dollars to own a dog and the same Society for the Prevention of Cruelty to Animals that benefits by the license fee for dogs will gleefully prosecute you if you take into your own hands retaliation against the cat that makes night hideous, knows no restraint and recognizes no owner. With all the hue and cry about hydrophobia and mad dogs, little or no attention is paid to the spread of hydrophobia by cats, nor have any adequate measures been taken by the Department of Health to check this possible source of danger. There is no city neighborhood in which sleep is not nightly sacrificed to the maudlin sentimentality that protects the sleek, smooth, soft, purring feline that plays with the baby and tortures the grown up. We can recall the time when one of our large city hospitals was literally overrun with cats that found a safe asylum in the by-ways and corridors that sheltered the steam-pipes, and prowled about at night to spread infection and keep the patients awake by their love songs or vociferous quarrels. They were protected by the sentimentality of the matron and the nurses. An enlightened municipality strives to check unnecessary noise and through its Health Department barking dogs and itinerant hucksters may be, upon protest, in some measure checked; one may even control objectionable roosters; but the tomcat howls triumphant and unrestrained. You may not poison him, nor shoot him, and from lethal assault he removes himself to a place of safety and impudently renews his attack upon your ear. We are told that the Society for the Prevention of Cruelty to Animals will gladly remove and painlessly eradicate any objectionable cat, but first you must catch your cat and, secondly, you must maintain him in comfort until such time as the Society's wagon chooses to call. Recent experience with this convenience has shown us that its calls are like angel's visits "few and far between." The anomalous position occupied by this semi-private corporation which has obtained an almost autocratic power such as should only be exercised by the municipality, has more than once been impressed upon the writer in his efforts to lawfully dispose of those occasional cats that have come alive into his possession. He has been advised by the Society's representative that "they will be called for in time." In return for the privileges which the Society enjoys they should be compelled to render prompt service. If their equipment and means are inadequate to the task, the law should be so amended as to place the disposal of objectionable animals entirely in the hands of an otherwise efficient Department of Health under whose auspices an active crusade to mitigate the cat nuisance should be conducted. Every person who desires to maintain a cat should be compelled to keep that cat where it cannot be a nuisance to the neighbors, nor should the unlimited propagation of cats be permitted. *A Society for the Propagation of Knowledge of the Means of Limitation of Feline Offspring* is in order. Enrollment blanks upon request. H. G. W.

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# THE MANAGEMENT OF PLACENTA PREVIA.*

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THERE is probably no severe obstetrical condition which has for its treatment more recognized modes of interference than that of placenta previa, and it is on account of the varied recommendations of different operators that the author has attempted to tabulate our modern ideas concerning the management of this dangerous condition.

A glance at the maternal and fetal statistics for this condition is sufficient to prove to us that the prognosis for both parties is most serious, especially if the treatment is not adapted to the individual case.

The maternal mortality is given variously from 4 per cent by DeLee to 11.4 per cent by Harrar and even up to 18 per cent by the older accouchment forcé method. DeLee gives the average maternal mortality as 7.7 per cent in 2,153 cases while McDonald in an analysis of 8,625 cases gives it as 7.22 per cent. The average fetal mortalities are given as 61 and 55 per cent respectively by these two authors.

Given, then, a case upon which the diagnosis of placenta previa has been made, what shall be the routine? There can be but one safe and sane method and that is to empty the uterus by the procedure which will preserve the mother's life and the integrity of her pelvic structures and at the same time give the baby the best possible chance for its life. The only exception to this rule of emptying the uterus immediately is the woman whose baby is nearly viable, who has bled only slightly and who will place herself in a hospital under the constant supervision of trained nurses and attendants. We may temporize under these circumstances, even pack the vagina for a period of eight to twelve hours in an effort to stop the bleeding. If a second hemorrhage occurs, however, the indication is to terminate the pregnancy.

The principles of treatment involved are four in number, namely; to check the hemorrhage and keep it controlled, to procure labor pains and dilatation of the cervix, to prevent infection and lastly to combat the shock and anemia. According to DeLee, the causes of death from placenta previa are, in the order of their frequency, hemorrhage, sepsis, rupture of the uterus and air embolism, though some foreign observers place sepsis before hemorrhage. Harrar, in the N. Y. State Journal of Medicine, vol. 14, 1914, analyzes 70 deaths from placenta previa in 20 years of the N. Y. Lying-in Hospital records. Of these 30 were moribund on admission, shock and hemorrhage accounted for 50, sepsis for 14, ruptured uterus for 5 and one case of edema of the glottis.

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* Read before the Brooklyn Genecological Society.

With these preliminary remarks let us take up in detail the different methods of treatment, their advantages and disadvantages.

I. *Simple Rupture of the Membranes.* This is the simplest method of treatment but is only applicable to the marginal and lateral implantations of the placenta with either a vertex or breech presentation. If the bleeding is slight and the presenting part comes down on the placenta, the condition may be controlled. With the membranes ruptured the placenta is allowed to retract with the uterus, so to speak. It must be remembered, however, that this method is most efficacious when uterine contractions are present, and in the absence of these may be of no avail whatever. As this type of marginal placenta does not generally bleed until the onset of labor, the method is well worth a trial, for even in case the bleeding continues we are always in a position to introduce an intra-ovular bag. After the membranes are ruptured a tight abdominal binder may be applied, strychnia and quinine given and even a small dose of pituitrin.

II. *Vaginal Tampon.* There is probably no one mode of treatment of placenta previa, upon which authorities differ so much as that of the use of the tamponade. Many authors use it almost exclusively while others have discarded it it completely. The author of this paper can see only three possible indications for the use of the tampon:

First: To control the bleeding during transport of the patient to the hospital.

Second: Bleeding in the presence of a rigid cervix, in order to procure some dilatation.

Third: A tamponade by the interne in the presence of alarming hemorrhage while waiting for his attending.

As a routine treatment of placenta previa the tampon has no place and the reasons for this are several. In the first place it will only control active bleeding for a short time and then only if the presenting part, especially the head, is in or very near the pelvic brim.

The tampon merely soaks up the blood and as more of the placenta separates the bleeding continues and appears at the vulva.

Again, the danger of sepsis is great, especially if the external genitals have not been shaved and thoroughly cleansed. The case that is tamponed at home by the family doctor is especially in danger as the conditions there are seldom perfect, and the author does not believe in the routine packing of these cases for transport unless the hemorrhage is marked. We must remember that more of the placenta separates only when the patient has a uterine contraction and if we give a full dose of morphine at home to stop the labor pains and wait a short time, they may be safely transported without the danger of bleeding in the ambulance. This tampon danger is a real one. Even if the gauze, gloves and instruments are sterile, we cannot cleanse absolutely the genital canal and vulva, and bacteria are forced directly up to the cervix. The blood acts as a wonderful culture medium and if the tampon remains in for a long time, the process extends directly to the placental tissue and the large placental sinuses in this location. Frend has shown that of the tamponed cases in his clinic 66 per cent had fever in the puerperium. Winter reported fever in 80 per cent of his tamponed cases and Sellheim 60 per cent with morbidity. The Dresden Clinic reported 58 per cent morbidity in 276 cases, and also stated that of six fatal cases of sepsis five had been tamponed. Again the tampon in many cases will not set up labor pains and the cases are often repacked several times. The average cervix in a case of placenta previa can with safety be dilated manually or with the Goodell dilator to a two-finger dilatation, and this is enough for a bag introduction or a bipolar version.

If the tampon is employed the technique had best be carried out with the patient in the Sims or knee chest position and the vagina firmly packed with iodoform gauze right down to the vulva and a broad perineal binder applied. Shaving and vigorous cleansing of the external genitals is of the greatest importance. Packing is best not left in over 12 hours.

III. *Accouchment Forcé* has no place in the management of placenta previa. If there is any one condition where the skill and gentleness of the accoucher count for success it is in the condition now under discussion. In the presence of a normal pelvis, the cervix is always the crux of the obstetric solution and more so in placenta previa than any other condition. The cervix is always soft and friable, bleeds easily even from small tears and is easy to infect. Treub gives the mortality of accouchment forcé for placenta previa as 18.2 per cent.

IV. *Braxton Hicks or Bipolar Version.* This is one of the oldest and for the mother probably the safest mode of procedure, its only drawback being the high fetal mortality. A few points of technique are important. The operation may be done in any case where the cervix is dilated or dilatable to two fingers and there is no spastic condition of the uterus contraindicating its use. The internal hand is passed into the vagina and two fingers held passively within the uterus. Under good anesthesia with abdominal and uterine relaxation the external hand does all of the real work of the version, displacing the head and then pushing down the breech so that the foot may be caught by the fingers within the uterus. If we are dealing with a partial placenta previa the membranes need not be ruptured until the foot is within easy reach, and if we are dealing with a centralis it is better to bore through the placenta than to go around the side. The point of technique that I am trying to bring out, is that the internal hand *can cause cervical laceration* and severe damage if the attempt is made to do the version mainly from below. As soon as the foot is grasped it is drawn gently down until the half breech sits upon the placenta, and the knee is at the vulva. The author is in the habit of packing a small amount of gauze about the thigh in the region of the cervix, this having the function of holding the thigh down in the vagina, softening the cervix, giving the blood something to coagulate upon and preventing too rapid expulsion of the baby, which in some cases can cause a rupture of the cervix and lower uterine segment. I have never seen the necessity of applying weights to the baby's foot or to a bag when this is used, and I think there is a real danger of the woman suddenly pulling herself up in the bed and rupturing the cervix. The obstetrician can, if he wishes, apply traction with his hand until the uterine contractions commence, or even give a small dose of pituitrin, or apply a tight abdominal binder.

The most important thing in treating any case of placenta previa is to save the woman all of the blood that we can, and the Braxton Hicks Version certainly does this. Schweitzer, in Zweifel's Clinic, found that the average amount of blood lost in the Braxton Hicks cases was only 335 cc. as compared to 680 cc. in the bag cases. Therefore Braxton Hicks should be the method par excellence in the exsanguinated mother, where her life depends on every ounce of blood that she can be saved. It has the added advantage over the bag method of necessitating but one manipulation, the patient having time to react from her shock and hemorrhage before she delivers herself, and these cases should without any exception be left for a spontaneous labor. The only case of placenta previa I ever lost was one in which, after 18 hours of labor following Braxton Hicks, and apparent full dilatation of the cervix, I allowed my interne to extract, tearing the cervix and causing sepsis.

The advantages of the bipolar version are therefore as follows: it is sure in its result if done correctly, it introduces no foreign body to cause infection; it requires but one manipulation and one anesthetic. It is without doubt the best method for use in a private dwelling. Its only disadvantage is an increased fetal mortality as compared to the bag method. Doederlein places the fetal mortality 75.7 per cent and Nagel at 68 per cent. It will thus be seen that it is applicable in all cases before the seventh month where we can get the necessary dilatation and from the 7th to the 9th month if the baby is dying or dead. Frigyesi of Budapest favors Braxton Hicks in all cases of placenta previa centralis, in preference to the bag, using cesarean section if the cases are near term.

V. *The Metreurynter.* Just as the Bipolar Version marked an improvement in the maternal statistics so has the use of the water bag meant a betterment in the fetal results. Hydrostatic bags were first used by Maurer in 1887, but to Dühirson really belongs the credit for the scientific application and refinement of technique of the method. These bags may be used by either the intraovular or extraovular method and both have their own adherents. I shall not burden you with all of the details of introduction of these bags, but a few points are of interest. The intraovular bag necessitates the rupture of the membranes or puncture of the centralis placenta and introduction of the bag within the amniotic sac. With each pain the bag is forced downward, pressing the placenta against the uterine wall and controlling bleeding. Here also the author packs a little gauze about the fornices and while he believes in traction on the bag at intervals by the doctor he feels that there is some danger in attaching weights to the bag. The extraovular bag is placed below the membranes or the centralis placenta and acts as a dilating wedge to open up the cervix. The unfavorable feature of the bag method is that when the bag is introduced the work is only half done. When it is expelled through the cervix, and one must train himself to recognize this time, the accoucheur must be prepared to act as there may be alarming hemorrhage. This is always true in the extraovular method and less so in the other. If the presenting part does not come down and control the bleeding, delivery by forceps or version must be done. This means another anesthetic and more blood loss than by the bipolar method but the immediate extraction means more live babies.

Opponents of the extraovular method claim that the bag actually separates up more of the placenta and causes more blood to collect above the bag. With the membranes unruptured the placenta cannot retract along with the uterine wall.

Doederlein gives the intraovular statistics as follows: maternal mortality 6.5 per cent and fetal 45.4 per cent. Cragin reports 49 cases of extraovular bag with a material mortality of 8.1 per cent and a fetal of 51 per cent. This would seem to favor the intraovular method.

The bag method then is particularly applicable to the partialis and centralis varieties where the baby is viable and in good condition and the mother is in such shape that she can stand some extra blood loss.

VI. *Vaginal Cesarean Section* for placenta previa was first performed by Baum, but the method today has but few exponents. Doederlien has reported a series of 40 odd cases with good results while Lindemann reports 31 cases with mortalities of 3.2 per cent and 66 per cent respectively for mother and child. The writer believes the method indicated between the 6th and 7th month when the cervix is rigid and the baby can be disregarded. After the 7th month the technical difficulties are so great as to almost preclude its use. There is danger of hemorrhage if the placenta is on the anterior uterine wall, and the baby must be delivered if its life is to be saved, making the danger of cervical lacerations very great. The placenta must be delivered manually causing danger of atony and sepsis and the friable tissue of the cervix must be sutured rapidly. Lindemann reports a 64 per cent morbidity for the operation.

VII. *Abdominal Cesarean Section* for placenta previa was first recommended by Lawson Tait and we have today operators who use it in all of their viable cases, and others who cannot see any indication for it in any case. Its routine adoption in all cases is certainly wrong and even though it may give better statistics for both mother and baby, its use is not warranted unless we sterilize the patient or do the Poro operation. The risk of rupture of the cesarean scar at a subsequent pregnancy is a thing not to be overlooked. This is a real danger, one that we cannot easily foresee, and, after all. the cesarean results are not enough better to warrant such radicalism. Dorant has shown that only 32 per cent of placenta previa babies are really at term. Cesarean would be contraindicated if the patient had been exposed to many examinations by doctors or midwives outside the clinic or it she had been tamponed, or showed fever. Marked previous hemorrhage, a dead or non-viable baby and the marginal and lateral cases are all contraindications to the operation. It is essentially an operation to save the baby and we must not take too much risk with the mother, to save the baby. E. P. Davis is rather broad in his indications for the operation as are also Pankow, Krönig and Sellheim.

Abdominal cesarean section for placenta previa is really today the pivot about which all the contention is centered. That a primipara with a rigid cervix and a centralis placenta at term should have the operation, we are all agreed. The writer is willing to go a step further and believes that we will see the indication more and more broadened, until either a primipara or a multipara at or near term with a live baby and a placenta previa centralis will be the subject for a cesarean section, especially if the cervix seems to offer any degree whatever of dystocia. Just as we offer the border line pelvic contractions, the chance for a live baby, so should we also when the placenta centralis is encountered.

I have performed one cesarean section for a combination of placenta previa partialis with transverse presentation and a borderline pelvis in a para II who had lost her first baby at its birth. E. P. Davis reports 17 cases with no maternal and 17 per cent fetal mortality. Pankow reports 38 cases with maternal and fetal mortalities of 2.5 per cent and 2.9 per cent respectively.

Summary: The management of placenta previa is therefore a matter of individualization and attention to detail, plus the skill of the operator with the methods at his disposal. The writer's ideas may be summed up as follows:

First: In the private house; placenta previa with active hemorrhage is best treated by either rupture of the membranes or the Braxton Hicks version, the latter being the safest procedure.

Second: In the hospital; between the 6th and 7th months with a rigid cervix the vaginal cesarean is indicated. Otherwise pack for 24 hours and then do a bipolar version.

After the seventh month: In the marginal and lateral varieties with live baby try rupture of the membranes first and if bleeding is not controlled introduce a bag.

In the partial and central varieties with a live baby use the bag. If the baby is dead or dying use the Bipolar version. In any case after the 7th month if the mother is weakened by the loss of blood the Braxton Hicks version is the method of choice.

In the centralis variety at or near term, with a live baby and mother in good condition if the cervix seems to offer any degree of dystocia abdominal cesarean is operation of choice.

Perforate all dead babies. Forceps should but rarely be used and only after the head has passed through the cervix. Never do an extraction either immediately or later after Braxton Hicks version. Always let the patient deliver spontaneously.

Summary of Cases of Placenta Previa: I should now like to present to your study a series of 64 cases delivered on the Obstetric Service of the Jewish Hospital, Brooklyn, during the past seven years.

There were 64 mothers and 66 babies, twins being twice noted.

Maternal mortality, two mothers died, 3.1 per cent.

Fetal mortality, 68.2 per cent.

This I believe compares favorably with the statistics given by DeLee for a large number of operators, namely 7.7 maternal and 61 per cent fetal. I think our fetal statistics are a little higher than the average owing to the large number of bipolar versions done. I perhaps favor the operation on account of the mother.

The two fatal cases are of some interest:

Case I: Thirty-seven years old, para VIII, in the seventh month of gestation with a partial placenta previa.

Bleeding for five days prior to admission and profuse when brought in. The cervix was dilated manually from one to one and one-half to two and one-half fingers and one foot of a complete breech pulled down. Hemorrhage controlled. Patient labored well for eighteen hours and after seeming full dilatation I allowed my interne to extract. The result was a post partum hemorrhage with a torn cervix, which necessitated packing. Died on the seventh day of sepsis.

Case II: Forty years old, para IX, placenta previa centralis at eight months. Profuse bleeding on admission, patient in poor condition from hemorrhage and shock, pulse 120. Manual dilatation to two fingers; Braxton Hicks version. Spontaneous delivery in two and one-half hours, back to ward in bad shape. Died in 3-4 of an hour of hemorrhage and shock. Possible spontaneous rupture of the cervix and lower segment.

Our series included one vaginal cesarean section by myself, a six-months' case, which had been bleeding in hospital for three days, with a rigid cervix. The vaginal operation seemed indicated. Recovery.

There were two cases of abdominal cesarean:

Case I: By Dr. Humpstone. A 39-year-old para XIV with a history of previous interposition of the uterus and a full term placenta previa centralis.

Case II: By Dr. Beach · a 36-year-old para II, with a border line contracted pelvis, large baby with a transverse presentation, full-term placenta previa partialis. First baby born dead and we thought the operation indicated. Forceps were applied only six times in the series.

*The placenta was incomplete in 49 cases* and *complete* in 15 cases. The treatment was about equally divided between the bag, Braxton Hicks and internal version. Tamponade was used only nine times ante-partum and then only to get dilatation enough for some other procedure. The tampon to control bleeding we found to be but temporary, many cases bleeding through in two to four hours and before dilatation had in any sense progressed.

One very interesting feature was the lack of sepsis, the one case that died being practically the only one. The mortality was particularly low. These results we ascribe to cleanliness and the avoidance of the use of the tampon both ante-partum and post-partum.

*A post partum tampon* was used only 11 times in 64 cases, although there were 15 cases of central placenta in the series. If we now analyze the 11 cases that were packed post partum we readily find the reason for such a procedure; namely, 10 of the 11 cases were traumatic deliveries, so to speak, cases where internal version with immediate extraction, or Braxton Hicks version with later extraction were performed. In the ten cases there were five cases of internal version with immediate extraction, two bi-polar versions with later extractions, one each after forceps, craniotomy and perforation of the after-coming head. Only one case was tamponed after bi-polar version and spontaneous delivery.

In contradistinction to these cases were 20 cases of Braxton Hicks version where no packing had to be used.

I have been accused of being too conservative in the handling of my placenta previa cases, but it has always seemed to me that the mother's life was of the greatest importance. Most of these placenta previa women are multipara with children at home, there being only seven primips in the series, and when we can send home alive 62 out of 64 mothers, it is gratifying that our efforts are not in vain.

## DISCUSSION

Dr. Polak: I wish to congratulate Dr. Beach and also the society on having one of its fellows present such a series of recoveries. I speak of this particularly for the reason that at the New York Obstetrical Society, the other evening, we heard a report from one of the maternity hospitals which was not comparable with what we have listened to this evening. There are certain conditions that have got to be met, and these conditions are hemorrhage, shock, sepsis and trauma, and the greatest is trauma, and that is the point this paper brings out: conservation in handling the patient. The next point is the few intrauterine tamponades necessary to control hemorrhage by leaving the delivery to nature. We know the report that has come from the other side of the river. I refer to the work of Dr. Grandin and Dr. Marks who presented a report of thirty-nine cases done by accouchement forcé, and while they reduced the fetal mortality to thirty-two per cent, the mothers' morbidity was large. Cases have to be individualized. The points which should be taken into consideration in the management of placenta previa are; the amount of hemorrhage, the condition of the mother, the condition of the cervix, the period of viability, the number of examinations and finally, the condition of the child. I am fully in accord with the conditions made by Dr. Beach. There are a certain number where the treatment must be a matter of choice. Where there is hemorrhage and the os is not dilated, to get a live child at, or near, term, the best measure is section. Bi-polar version, bringing down the foot, and leaving the case for spontaneous delivery is the safest for the mother, but, the fetal mortality is large; we have, however, got to conserve the mother, and this method lessens the danger of hemorrhage and minimizes the sepsis. Very few men, unfortunately, can apply a tampon properly. It is not packing the vagina but packing the pelvis which is required, as Dr. Pomeroy has stated. The tamponade must be done with moist gauze and with the patient in the proper posture. It is only a temporary, an emergency measure, and we use it only until we can do a Braxton-Hicks procedure. I want again to thank Dr. Beach for presenting the paper and I hope it will be printed where the general practitioner can see it, for the general practitioner is getting enthusiastic over operative procedures.

Dr. Hussey: I am pleased to add my quota of praise for this splendid presentation of the subject of placenta previa. I went over this same ground several years ago and I am glad to find that Dr. Beach and I are much in accord on the most important principles of treatment. First of all I agree with him most heartily that one plan of treatment will not do for all cases. To each case must be fitted its appropriate treatment. It has been my custom to use the methods he has outlined in much the same way as he has described. I recognize only one indication for cesarean section for placenta previa, namely, a complete previa in a primarous patient, with a viable baby, a cervix not easily dilatable, a birth canal not contaminated by previous attempts at treatment and a patient that is in condition to withstand the shock of a major operation. I rarely find this indication. I have done one cesarean section, and left undone one that I should have done, in a series of thirty-five or forty cases. As a rule I find the use of hydrostatic bags the method of choice. I have used the Pomeroy bag in a number of cases and think that, if used with care, it possesses some advantages over the Voorhes bag. As a rule, I believe, delivery should be accomplished by version and spontaneous expulsion. This of course after dilatation has been obtained by the bag. Bi-polar version I reserve for the case with nonviable child. It is the safest method of all for the general practitioner, provided he has the manual dexterity to accomplish it. It gives the mother the best chance. The prognosis for the baby is not so good as with bags. Tamponade of the vagina should be reserved for emergencies only. Sepsis is one of the big risks in the treatment of this condition, and the less we invade the vagina, the less the risk of sepsis. I would even go so far as to question the use of gauze for packing after version is completed, as described by the writer. However, when a tampon is to be used, I favor the tampon made of plegets of cotton tied at intervals of a few inches on a long string. With this tampon, the firmest kind of a pack can be inserted.

Referring to hysterotomy in the treatment of placenta previa, I have never favored it. I tried it, however, in a case some months ago, and now I favor it less than ever. The patient bled terrifically. I was very sorry I started it before I finished. The patient recovered but the baby was stillborn.

Under the selective methods of treating placenta previa, the prognosis is very good. In my review of the work of the Brooklyn Hospital presented to this society last year I referred to our series of 45 consecutive cases without a death. Since then we have lost one case. She died from post-partum hemorrhage about twelve hours after delivery. She lost too much blood before and during her delivery and in spite of an intrauterine pack she bled suddenly in the night and died before anything could be done to save her. We now have a series of over fifty-seven cases with but one fatality. We are, therefore, prepared to agree with Dr. Beach that with properly selected methods of treatment the death rate from placenta previa ought to be slight.

Dr. Holden: Dr. Beach has expressed my ideas fully and I have nothing to add to his excellent paper. One great error made by the general practitioner is to be in a hurry. It seems to be almost impossible to restrain him from interfering after a bi-polar procedure; he seems unable to keep his hands off. Outside of the hospital it is difficult to do these operations without septic dangers.

Dr. Beach: In regard to the use of the tampon at the thigh of the child it always seemed to me when I pulled down there was a certain amount of hemorrhage; and a small amount of gauze, folded into one or two inches of packing as a tamponade alongside the thigh tended to hold the thigh down and was something for the blood to coagulate against. It could not come into contact with the interior of the cervix or the placental site.

# THE DIAGNOSIS AND REMOVAL OF FOREIGN BODIES IN THE TRACHEA, BRONCHI AND OESOPHAGUS.*

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THE history of bronchoscopy and oesophagoscopy, while dating back only a few years, holds a foremost place in the many triumphs of modern surgery. The invention and development of the instruments used in this work has lessened in a great degree the mortality in cases of foreign body in the trachea, bronchi and oesophagus.

Previous to 1895, on encountering a case of foreign body in the lower respiratory tract, the method of procedure was to perform a tracheotomy and blindly search for the object with forceps. When the body was lodged in the oesophagus—probangs, coin catchers and various types of forceps were used, hoping by some chance the object might be caught and extracted. Both seem now, in the light of present knowledge, to have been very crude and unscientific methods. In 1895, Kirsten demonstrated a technic which he called autoscopy, by which he could make a direct inspection of the larynx. Up to this time the indirect method with a laryngeal mirror was the only available means. In 1896, Von Mikulicz reported that he had succeeded in exploring the trachea by means of a straight tube and in the following year, Killian removed a foreign body from the bronchus. Since that time, rapid strides have been made in unfolding this new field of surgery—the direct inspection, diagnosis and treatment of pathological conditions in the trachea, bronchi and oesophagus. In 1902, Einhorn devised an instrument having an auxiliary tube in the wall of the main tube, for the purpose of carrying a lamp to the lower end. In 1905, Jackson combined the straight tube of Killian with the light-carrier of Einhorn, forming what is today the Jackson tube, which remains almost unchanged up to the present. Many modifications of the Killian tube have been made, the most important being that of Bruening.

I am firmly convinced that foreign bodies find their way into the respiratory tract or lodge in the oesophagus much more frequently than is generally supposed. Ample evidence of this is furnished in the fact that in many of the cases, several physicians have been consulted before one makes a correct diagnosis and then of course the gravity of the situation is realized.

The history of these cases is very important, especially in children, and is often very difficult to obtain, because the seriousness of inhaling or swallowing foreign bodies is not realized by the laity. Physicians should be on their guard when there is the least suspicion that the trouble can be even remotely traced to such causes. In one case of which I shall speak later, the child was seen by four different physicians and finally went to a Department of Health Tuberculosis Clinic for the relief of cough—the cough having been really caused, as was afterwards proven, by a foreign body in the left bronchus.

The symptoms of foreign body in the respiratory tract are principally cough and dyspnoea; the cough being paroxysmal in character and may or may not be severe, the dyspnoea being increased after spells of coughing.

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* Read before the Medical Society of the County of Kings, January 19th, 1915.

In the oesophagus the cardinal symptom is difficulty in swallowing, but this may vary in extreme limits from almost no disability to complete dysphagia. Dyspnoea may occur where the foreign body is in the oesophagus, as the object may press forward, narrowing the lumen of the trachea. Patients often complain of pain, but this is seldom definitely localized and there may be an elevation of the temperature, if inflammatory reaction has resulted from the presence of the foreign body.

In cases where the object has found its way to the bronchus, the physical findings give evidence of diminished respiration, together with signs of inflammatory changes in the areas supplied by the occluded bronchus.

The X-ray is of the greatest aid in diagnosis and in all suspected cases a radiograph should be taken.

The diagnosis of foreign body, either in the respiratory tract or in the oesophagus, being made, the problem of its removal follows and this can best be accomplished and with a minimum of danger by means of the bronchoscope or oesophagoscope. These instruments, as has been so often pointed out by Doctor Jackson, are in reality, specula, combined with suitable lighting attachments, by means of which the interior of the trachea can easily be explored and studied.

These instruments are of two distinct types—the European, in which the light, placed at the upper end, is reflected down the tube—and the American, in which the light is placed at the lower end. Both have their advantages and disadvantages.

Tracheo-bronchoscopy is divided into two classes—upper and lower. Upper, where the tube is passed through the natural passages, *i. e.*, the mouth, pharynx, larynx, etc.—lower where the instrument is passed through a tracheotomy wound. The latter has rapidly become obsolete and it can be said that a tracheotomy is now seldom, if ever, indicated as an aid to the removal of a foreign body.

In adults, general or local anaesthesia may be used, but the former (*i. e.*, ether) is usually preferable. In children under the age of ten years, no anaesthesia of any kind should be used and although in several of the cases which I shall report, general anaesthesia was used, I am now satisfied that they can be done with far less risk and with as much ease without any anaesthetic whatever.

With local anaesthesia, the patient may be placed in a sitting posture, but when general anaesthesia is used, should lie flat upon the back with the head held, not hanging, beyond the end of the table.

Serious organic disease is the only contra-indication in exploratory operations, and there can be *no* contra-indications once the presence of a foreign body has been positively determined.

The dangers of bronchoscopy and oesophagoscopy are slight. In operating in the respiratory tract, the chief danger is in continuing any one sitting for too long a period. If the object has not been accomplished after forty or forty-five minutes work, it is much safer to discontinue and allow the patient twenty-four or thirty-six hours to recuperate. Killian has reported one case, where ten sittings were required for the removal of a foreign body from the bronchus.

In the oesophagus, compression of the trachea must be guarded against, for as we know, the cartilaginous rings of the trachea are deficient posteriorly and if too large a tube is used or the instrument is improperly held, pressure upon the trachea may cause difficulty or even complete cessation of respiration. No undue force should be used

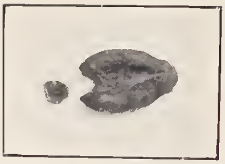

Fig. I
Watermelon seed removed from trachea

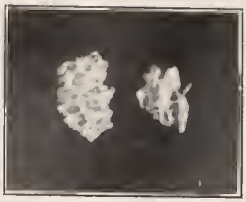

Fig. II
Soup bone in left bronchus 29 days.
Removed by upper bronchoscopy

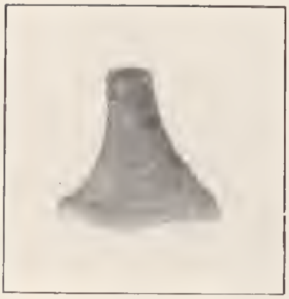

Fig. III
Chicken bone removed from oesophagus

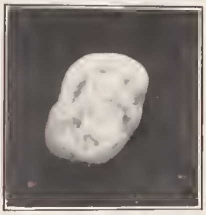

Fig. IV
Pebble in left bronchus 15 days.
Removed by upper bronchoscopy

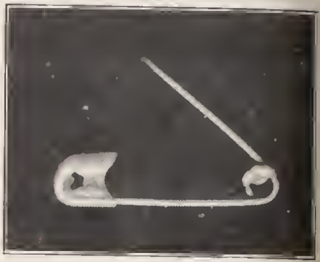

Fig. V
Open safety-pin removed from oesophagus

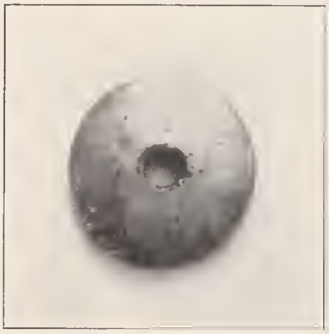

Fig. VI
Whistle in oesophagus 2 1-2 months

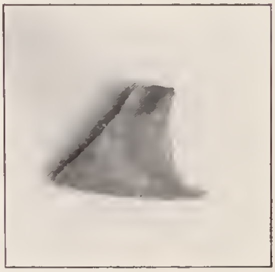

Fig. VII
Chicken bone removed from oesophagus

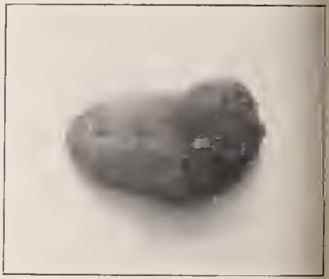

Fig. VIII
Piece of meat completely occluding
oesophagus for 3 days

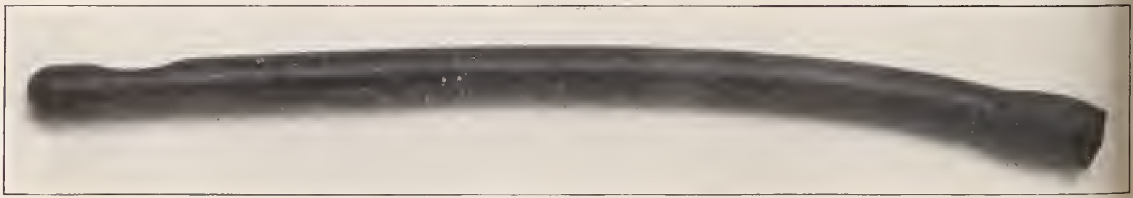

Fig. IX
Nasal tube from ether inhaler—removed from trachea

in passing the tube, every move should be seen and the tube advanced only when the lumen of the trachea or oesophagus is seen to receive it.

The early diagnosis and prompt removal of foreign bodies, either from the respiratory tract or oesophagus, is of the greatest importance, as the dangers of pneumonia, ulceration and sepsis rapidly multiply.

*Case I. M. H., female, age five years, was brought to my office by Doctor Frank G. Sammis, with a history of suddenly occurring dyspnoea, the onset about half an hour before, while the child was eating watermelon. On examination patient showed considerable dyspnoea, both respiratory and expiratory with decided muscular effort, but there was no marked cyanosis. She was at once taken to the German Hospital and under ether anaesthesia, the bronchoscope was passed without difficulty. The seed (Fig. I) was at once seen lying about the middle of the trachea, grasped by the forceps and the seed and tube removed together. Beyond a slight laryngitis there was no reaction and the child was discharged from the hospital on the third day.

Case II. R. K., female, age nine years. The patient applied to a Department of Health Clinic for the relief of cough, having been treated by four physicians without relief. After careful questioning the mother stated that the cough dated from a time twenty-nine days previous when the child while eating soup cried out that she had swallowed a bone, choked and became slightly cyanotic. Since that time the cough had steadily increased with a development of pain in various parts of the chest. Physical examination showed signs of consolidation over the whole left chest. Temperature 101, pulse 118, respiration 40. The diagnosis of foreign body in the bronchus was made and she was referred to the German Hospital. That evening under ether anaesthesia an upper bronchoscopy was performed and the left bronchus found to be almost entirely occluded by a piece of cancellous bone (Fig. II). It was withdrawn to a point just below the vocal chords, where it became impacted in the trachea and the piece in the grasp of the forceps broke off. The remaining fragment was removed a moment later. These bony fragments were very rough and of an extremely foul odor. The traumatism caused by the bone wedging in the trachea caused such a reaction, that four hours later it was found necessary to intubate and about three days later a tracheotomy was performed. After wearing the tube about six weeks, the inflammatory process subsided and the tube was withdrawn. The chest condition subsided promptly.

Case III. F. R., female, age forty-six years. A triangular piece of chicken bone (Fig. III) removed from upper part of oesophagus without anaesthesia.

Case IV. H. R., male, age ten years, brought to the German Hospital in the ambulance with following history. Two weeks previous to admission, he had been throwing pebbles in the air and catching them in his mouth. While so doing, one was swallowed and he became cyanotic but after severe coughing, the pebble seemed to be dislodged and the child could breathe easily. A physician was called who prescribed for the boy and left. A week later the patient developed fever, severe headache and pain in the left side of the chest, posteriorly. Another physician was called, who prescribed and the patient seemed to improve. Just before admission while playing in the street, the boy

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* Published in Long Island Medical Journal, July, 1912.

had another attack of pain, coughing and cyanosis, on account of which the ambulance was summoned and the patient was brought to the hospital. Physical examination showed dullness, diminished fremitus and rales over practically the whole of the left lung. The X-ray showed a shadow to the left of the vertebral column at the level of the sixth rib. Under ether anaesthesia, an upper bronchoscopy was performed and a pebble (Fig. IV) found completely occluding the left main bronchus. The extraction was extremely difficult, because of the smoothness of the pebble, for after being withdrawn from the left side it slipped from the forceps and dropped into the right bronchus, from which it was finally removed. The pneumonia promptly subsided and the child was discharged from the hospital on the eighth day.

CASE V. A. H., male, age ten months was referred by Doctors Lutz and Dexter, with a history of having swallowed a safety pin on the previous day. An X-ray examination by Doctor Eastmond revealed an open safety pin in the upper part of the oesophagus, the point directed upward and to the left. The baby was taken to the German Hospital and under chloroform anaesthesia, the safety pin was easily reached by the oesophagoscope. The available safety-pin-closers were too large for use upon so young a patient, but after considerable manipulation and pushing the pin further down into the oesophagus to release the point which was embedded in the left lateral wall, the pointed end of the pin was brought into the lumen of the tube. No attempt was made to engage the head end, but the pin, tube and forceps were withdrawn together. The child made an uneventful recovery, the temperature subsiding in about three days and the stiffness of the neck in about a week.

CASE VI. C. D., male, age three and a half years, referred by Doctor Fettes. Sometime during the first week in November (two and one-half months previously), the child swallowed a whistle but at that time apparently suffered no discomfort. About a week later the boy complained of nausea and from that time on showed a marked loss of appetite, often refusing all food except liquids. Attacks of nausea were frequent. Finally, almost two and a half months after swallowing the whistle, the family physician was consulted, who at once had an X-ray picture taken, which showed the whistle lodged in the middle portion of the oesophagus. The patient was referred to the Swedish Hospital, where under ether anaesthesia, the oesophagoscope was passed, and the whistle (Fig. VI) removed. Notwithstanding the long time the foreign body had remained in the oesophagus, the child has suffered no ill-effect since its removal.

CASE VII. S. R., male, age three years and ten months, referred to German Hospital by Doctor Clayland, with the following history. Twenty-two days before admission the child swallowed a penny. Gagging and vomiting followed which persisted for twenty-four hours and for the next few days the child showed no desire for food. Thirteen days after swallowing the penny he showed signs of fever and developed a cough, which grew progressively worse. On physical examination there was evidence of a pneumonia on the right side, with fluid in the right pleural cavity. The temperature was 102.6, pulse 140, respirations 40. The temperature soon rose to 105. The X-ray showed a penny impacted in the upper part of the oesophagus. The oesophagoscope was passed without anaesthesia and the penny removed. The fluid in the left chest showed a pure culture of pneumococcus and a few days later a rib was resected by Doctor Fulda and the child recovered after the usual course of any empyema.

CASE VIII. H. N., female, age twenty-nine years, referred to the German Hospital by Doctor Moore on account of having swallowed a piece of chicken bone a few hours previously. She was examined and told to return the next morning, but late that night came again to the hospital, demanding that something be done because of such severe pain in her throat. Under ether anaesthesia a triangular piece of bone (Fig. VII) was found lodged at the cricoid constriction of the oesophagus and removed.

CASE IX. C. J., male, age seventeen years, referred by Doctor Kemp. For some time the patient had noticed difficulty in swallowing. Thirty-six hours before being seen by the writer, he had swallowed a large piece of fresh ham, since which time not even small amounts of water could be forced down. The patient was sent to the Brooklyn Eye and Ear Hospital where under ether anaesthesia, a large wedge-shaped piece of ham (Fig. VIII) was found completely filling the oesophagus at the level of the cricoid cartilage. After removing the foreign body, the oesophagus was examined and found to be perfectly normal in size, the patient's previous difficulty having been due to improper mastication.

CASE X. N. W., male, age four years, referred by Doctor Pfeiffer, with a history of having swallowed a twenty-five cent piece two days previously. An X-ray picture taken by Doctor Williams showed the coin in the upper part of the oesophagus. The child was referred to the Brooklyn Eye and Ear Hospital where without anaesthesia the oesophagoscope was passed and the coin removed.

CASE XI. A short time ago, I received a telephone message from one of the hospitals in this city to come at once to that institution. A patient under anaesthesia on the operating-table was supposed to have inhaled a foreign body. On my arrival I found the patient while having a laparotomy performed, had borne the anaesthetic very badly and as an aid to respiration, the anaesthetic had been given through two tubes inserted into the nostrils. On account of the coughing and cyanosis already existing, the exact time of the disappearance of one of these tubes was not noted and there were no symptoms indicating whether it had been inhaled or swallowed. An examination of the respiratory tract was made first and the upper end of the tube (Fig. IX) was found about the middle of the trachea, seized with forceps and withdrawn. Except for a sore throat, the patient showed no ill-effects from this experience.

CASE XII. L. L., male, age forty-one years, referred by Doctor Harry Lincoln. Patient stated that since the age of fourteen, when he swallowed carbolic acid by accident, he has observed some difficulty in swallowing but never severe enough to necessitate treatment. Two days before being seen by the writer he took a cathartic pill since which time all food both solid and liquid has regurgitated. He was referred to the Brooklyn Eye and Ear Hospital, where under ether anaesthesia the oesophagoscope was passed and instead of finding as I had suspected, a swollen and inflamed stricture, due to some irritant action, it was found that the pill was acting as a perfect ball valve at the point of stricture. The pill was removed after which the stricture was dilated.

# A CONTRIBUTION TO THE CLINICAL STUDY OF HYPERTENSIVE NEPHRITIS.

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## *The Fourth Paper—The Metabolism of Nitrogen in Nephritis and its Relation to Nephritic Acidosis.*

THIS consideration of nitrogen metabolism in nephritis will be limited to a few salient facts which are of especial interest to the clinician and which have a direct bearing on etiology, diagnosis and treatment. In fact, nephritis has no constant specific nitrogen metabolism, *as shown by the N-balance.* von Noorden has characterized many unexplained deviations from normal N-distirbution in the urine of nephritics, as "bizarre," at the same time calling attention to the fact that the accuracy of the N-balance is postulated on complete excretion. It is a well-known fact that with low facor of safety and high over-load, the kidneys have selective action in the excretion of nitrogenous and mineral waste-products. This is shown by the retention of uric acid within the system when the excretion of other nitrogen end-products are normal. There are certain stages in nephritis when evidence points to increased catabolism of nitrogen. On the other hand, the loss often turns to retention. These events occur without apparent clinical change. The word "bizarre" should therefore be used in a restricted sense as indicating deviations resulting from unknown causes rather than the result of haphazard chance (*vide,* Mosenthal—*Arch. Int . Med.,* 1914, xiv, 844).

At the same time, the prime problem in the dietary treatment of nephritis is the problem of proper protein resorption through the intestinal wall and its proper utilization in the cell. The conditions might aptly be compared with those which obtain with respect to carbohydrate in diabetes. Through the normal intermediate metabolism of protein may not be known in all its details, though the N-balance may disclose a metabolism which may rightfully be termed "bizarre," yet it is entirely proper to isolate prominent features and give them rational clinical setting.

It is proposed to consider as fully as space will permit, such evidence as is at hand concerning the possibility of protein sub-metabolism in nephritis. This term is chosen in place of the more familiar and much abused word "sub-oxidation." It will be shown that this condition is one intimately bound up with acidosis, and that such clinical evidences as may be ordinarily available to the general practitioner or sub-metabolism is really evidence of acidosis. Then, an endeavor will be made to show that both (including increased nitrogen catabolism) are ordinarily accompaniments of infections and may also follow the absorption of substances which act as reducing agents in the organism. In fact, the introduction of reducing substances into animals is the commonest method of causing experimental nephritis, and is often followed by arterial hypertension. The connection here, immediately leads us to a consideration of bacteria, and bacterial products as causes of nephritis, and the relationship which the ingestion of those foodstuffs which act as reducing agents in the organism bears to the problem as a whole. It will be necessary first to consider what may be called the "pathological physiology" of protein.

Ingested as food, protein has a specific dynamic action. In other words, it stimulates the production of more heat than it yields. Used as a foodstuff, it must be guarded by an abundance of heat-producing food, such as carbohydrate or fat, else catabolism is excessive and there is loss of weight and strength. This action is undoubtedly referable to the reducing power of protein and its structural units, which is one of the most conspicuous of its chemical characteristics. If we consider the various disintegration products of protein, it will be found that parent protein itself, even when cooked, has strong avidity, and that this avidity increases as disintegration proceeds. Of the amino-acids, the aromatic nuclei have reducing powers more marked than the mon-amino-acids. The next lower disintegration products are the amino-bases of which the familiar putrescine and cadaverine are members. They are formed through the intervention of bacteria by reduction processes under anaerobic conditions. In these substances, we find the climax of that of avidity for oxygen, which is so characteristic of protein and its disintegration products down to this point. Beyond, disintegration is carried out mainly by oxidation, and deamination, rather than reduction. Oxygen avidity is therefore largely satisfied.

## THE ACIDOSIS OF CARDIO-NEPHRITIS.

Another characteristic of the protein in this connection relates to its acid-alkali equilibrium. Native protein is amphoteric, the acids and bases within the structural units being so arranged that they "mutually satisfy each other." There is a preponderance of acids over bases, however, when the cleavage occurs along lines of normal separation under the influence of digestive enzymes and bacteria. In other words, the end results yield acids to bases in the proportion of about 38 to 24. Finally, protein ash is acid in reaction to litmus. Under certain circumstances in the enteron, deamination occurs through the action of bacteria. The ammonia thus released is carried to the liver through the portal vein, and portions synthesized to urea. One of the chief bases of protein is thus lost, rendering the effect of protein on the organism as a whole even more acid than when properly assimilated (Blatherwick). The sulphur and phosphorus content of protein is liberated during metabolism. Eventually these elements are oxidised at the expense of fixed cellular oxygen into acids, requiring union with bases for removal. The tendency to increased acidosis and sub-oxidation is apparent. Recent work by Blatherwick, above quoted, indicates that on a meat diet the hydrogen ion concentration of the urine increases especially when the nitrogen therein is not well guarded by carbohydrate and fat.

The recent work of Palmer and Henderson of Boston and of Sellards of Baltimore has shed much light on the subject of alkali-acid equilibrium of the body fluids. A resume is here given, because of its importance in the consideration of the metabolism of Bright's disease. Normally, there is a constant production of acids—namely carbonic, sulphuric and phosphoric—as the result of metabolism, the quantity being influenced by the character of the ingestion. The slight alkalinity of the blood is largely maintained by the behavior of the three salts of sodium phosphate. Within free limits, increase of acidity is antagonized by this method even in pathological states. The manifestation clinically is increase in the titratable acidity of the urine. The presence of abnormal acids in the urine such as acetoacetic acid, oxy-butyric acid and others

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Blatherwick—*Arch. Int. Med.*, 1914, xiv, 409. See also Folin and Denis—*Journ. Biol. Chem.*, 1912, xi, 161; Sherman and Gettler—*Journ. Biol. Chem.*, 1912, xi, 337.

taxes the ordinary methods of neutralization to such an extent that it breaks down, and $NH_3$ is utilized by the organism to maintain the normal equilibrium. The normal excretion of ammonia is constant (or approximately so) and when the excretion is increased it is solely the result of the presence of some of these acids elaborated as the result of sub-metabolism. The quantity of acid in the urine is a fair index of the acid state and is measured in "latent" or "relative" acidosis by the amount of alkali which must be added to the urine in order to obtain the normal alkalinity of the blood (which for clinical purposes is neutrality). In "absolute" acidosis (*i. e.*, of diabetes) the acidosis may be expressed by the above to which is added the ammonia excretion, expressed in terms of neutralizing power of the standard used to neutralize the urine. Normal sodium hydroxide solution is usually employed.

Acidosis is therefore the result of the over use of acids or acid-producing substances in the food, a breakdown in the neutralizing mechanism (including poverty of bases) or failure in elimination. Those milder forms in which the $NH_3$ excretion is not increased may be termed "latent" or "relative." This form appears intermittently or constantly in cardio-nephritis until actual uremia supervenes when increased $NH_3$ excretion indicates a heavier excretion of acids. The term "absolute acidosis" should be reserved for the severe grades accompanying severe uremia and diabetes. The dependable literature on this subject is scant, but may be found in the following references: Henderson and Palmer—*Journ. Biol. Chem.*, 1911, ix, 423; Ibid., 1914, xvii, 305; *Ibid.*, 1913, xiii, 393; *Ibid.*, 1913, xiv, 81; *Arch. Int. Med.*, 1913, xii, 153; Sellards-*Bull, Johns Hopkins Hosp.*, 1912, xxiii, 289.

Sellards has shown that on a carbohydrate-free diet for a three-day period, there was a definite "rise in tolerance for bi-carbonate." This expression is used to indicate the condition wherein the quantity of sodium bicarbonate, taken internally, must be increased to change the acid reaction of the urineto alkali.

The protracted use of nitrogenous food-stuffs by a nephritic with low excretory power, is directly responsible for latent acidosis through introduction into the body of acid-producing material and to sub-metabolism of protein through its avidity for oxygen and the abstraction of fixed oxygen from the cell where it should be employed for other purposes. This does not conclude however the "physiological pathology" of albumins. There is a distinctly pathological action on the duodenal mucous membrane when the protein in-take has a high concentration, leading to catarrh, lack of assimilation and poor duodenal digestion. The point is one which involves the relationship of enterogenic sapraemias to nephritis which will be treated later, but for the sake of order, the facts will be detailed here. I have never seen this phase of the subject presented in clinical literature although well known among laboratory workers. It has an important bearing on the regulation of the nephritic dietary.

Some years ago, workers in the various German laboratories began to concern themselves with the problem of protein synthesis, and in an effort to prove this synthesis possible, fed animals on a dietary in which all nitrogen was in the form of structural units. These experiments were almost invariably defeated by gastro-intestinal irritation aroused by the hydroscopic and reducing action of the Baustein.* It is interesting to note that in many instances the true significance of the phenomena was not appreciated. The enteritis thus induced was followed by diarrhoea and loss of nitrogen in the stools to such an extent that N-balances were impossible. The actual presence of excess protein is not the only factor in producing the end-result. The concentration is all important. Some years ago it was thought that nutrition of the sick could be maintained better by the feeding of predigested proteins in the form of peptone and these substances formed a not inconsiderable part of the dietary. Duodenal irritation and peptone diarrhoea often resulted. Pfeiffer induced in himself and in his co-workers diarrhoea by the ingestion of peptone. Blum states that this sort of abnormal discharge causes a loss of 10 per cent ingested N in the feces. Neumeister and Klemperer both heartily condemn the use of peptone preparations, the latter saying: "Witt's peptone has a decidedly injurious effect when taken into the stomach. It irritates the gastric mucosa, retards absorption and may cause diarrhoea."

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* vide, Loewi—*Centralbl. f. Physiol.*, 1902, 590; *Arch. f. exp. Path. u. Pharm.*, 1902, xlviii, 303; Henderson and Dean—*Amer. Journ. Physiol.*, 1903, ix, 386. These are a few isolated instances only; experimental literature furnishes scores of such examples.

The irritating effects of the isolated protein fragments have been overcome by many workers and especially lately by Osborne and Mandel, who succeeded by lowering the concentration and the quantity. As an important contribution to success in feeding on a low nitrogen diet, they found that the three aromatic nuclei, tryptophane, phenylalanine and tyrosine were indespensable and that all others could be excluded from the intake. This has an important bearing on the dietary of nephritics. It appears that the use of nitrogenous food in excess and in high concentration leads to duodenal irritations, and it will be seen in a later chapter that the delay in absorption which naturally follows opens up a chain of events which tends to promote still further the metabolic disturbances which are so characteristic of kidney irritation.

## THE SUB-METABOLISM OF PROTEIN IN NEPHRITIS.

As heretofore indicated, I shall not use the word "sub-oxidation." The reasons for this are obvious. Those who have followed recent researches in the chemistry of metabolism will realize that oxidation is not the only reaction by which the cellular zymases and their activators achieve catabolism. There are definite physiological processes of reduction, syntheses and pairing. To gain an adequate conception of what "sub-metabolism" means, it will be necessary to know all intermediate products in the normal metabolism of protein. It should follow that the toxicology of these multitudinous substances be studied in the healthy organism and in organisms in which oxidation powers have been reduced by appropriate methods, and in which excretory powers has been artificially reduced. Finally, there are studies in "symbiotic toxicology," for rarely is the organism subjected to intoxication by a single substance.* We have yet to speak of the potential toxicology of bacterial poisons under various conditions, especially those in which there is absorption for a long period of time—in fact, years.

The problem therefore is a large one, and its complexities can hardly be appreciated with present limitations in knowledge. Submetabolism covers a larger field than nephritis, though certain types are very apt to be associated with nephritis. Furthermore, there may be sub-metabolism for one or more definite structural units while the

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Blum—*Ztschr. f. physiol. Chem.*, 1900, xxx, 15; Klemperer—*vide, v. Leyden's Handb. der Ernahrungs Ther. u. Diät, i Pt.i.*, 1897, 292. Literature here.

Osborne and Mandel—Publications of the Carnegie Institution of Washington, 1911, No. 156, Pts. i and ii. Especially on the subject of dietary roughage, see Mandel and Lewis—*Journ. Biol. Chem.*, 1913, xvi, 32, who demonstrate the effect on nitrogen absorption and elimination of agar-agar, mineral oil and other substances of like nature added to the food.

* A study recently reported by O'Hare (*Arch. Int. Med.*, 1913, xii, 49) in which uranium nitrate and B. coli communis (alive) produced cirrhosis of the kidneys is a good example.

same organism is quite capable of carrying on its work in other directions in a normal manner. For example, there is in alkaptonuria, a sub-metabolism of homogentisinic acid. The victims live normal lives, usually without symptoms. "Sub-oxidation" has been applied clinically to conditions which are now known either as direct infections or due to the absorption of bacterial toxines.

It is not my purpose to offer a critique of the work which has been done in this field or to draw any definite deductions therefrom other than to call attention to the similarity between the behavior of nitrogen in the body at certain stages of chronic nephritis and during the course of infectious diseases of certain types. The detail of this must be obtained from the various authors at first hand, but there is that same tendency toward nitrogen loss during more acute stages, the same tendency toward moderate acidosis and in terminal stages toward severe acidosis, during which the ammonia excretion is increased. Uric acid in the urine is a criterion of sub-metabolism of purins increase, and is found in many infectious diseases (Mandel). Likewise it is a frequent manifestation of mal-metabolism during the course of a nephritis, especially when the disease is seemingly making progress at more than ordinary rate.

In his studies of the oxidases, Kastle has shown us that substances are toxic in proportion to their reducing power, *i. e.*, in proportion to the power which they exhibit for withdrawal of available fixed oxygen from the metabolism of the cell, and it is an interesting fact in this connection that of the substances which are used for the production of artificial nephritis of various types in animals those are most successful which have the greatest reducing power. The products of bacterial action on protein in the absence of available oxygen are reducing substances, prominent among which are the amino-bases, of which more later. The bacterial toxines themselves are reducing agents, as shown especially for the intra-cellular toxine of the B. coli communis by Vaughan. The method by which reducing substances act on the cell must be similar to that by which excess of amino-acids act on the cell.

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Kastle and Elvolve—*American Journal of Chemistry*, 1904, xxxi, 195. This can be found in the New York Public Library, main building, 42nd St. and Fifth Ave. See also Bull. No. 51, Hygienic Laboratory, Public Health and Marine Hospital Service, 1909. To those interested in the theory of respiratory changes in the cell, the following illustrations will prove of interest. Kastle has shown that the toxicity of reducing substances is directly proportional to the amount of oxygen required to complete the reduction. For instance, the toxic dose of sodium nitrate is not far from 3 c.c. normal solution, intravenously, per kilo b. w. In order to pass to nitrate, hydroxylamine, an amino-base, $NH_2OH$, which is normally metabolized to nitrate, requires three times as much oxygen to complete the oxidation as simple nitrate and is therefore three times as toxic. It is therefore obvious that the presence in the cell of available oxygen, either as such or in the carbohydrate moiety, is a factor in the determination of toxicity, a point which will be taken up in connection with treatment and the supply of oxygen to the cell in connection therewith. The normal respiratory exchange of the cell is thus diminished by the presence of reducing substances.

With reference to the action of protein structural units, the action in proportion to mass as determined by Lusk, is the same, by virtue of their reducing action. Dakin has determined the behavior of phenyl-proprionic acid (desaminaized phenyl-amino-proprionic acid) in the organism with oxidation processes normal.

Phenyl-proprionic acid ——> phenyl-oxy-proprionic acid ——> benzoylactic acid ——> acetophenone ——> benzoic acid.

Phenyl-proprionic acid is easily oxidised and the lethal dose is 8 gm. per kilo b.w. When introduced into the circulation in such amounts large amounts of acetophenone are found in the urine (sub-oxidation), and Dakin attributed

Without further consideration of the detail of this subject it may be said that the nitrogenous metabolism of nephritis, more particularly of the chronic varieties, is characterized by tendencies toward acidosis and sub-metabolism of certain segments of the protein molecule. These tendencies appear during stages of the disease when its progress appears to be more rapid. There are times also when there is increased catabolism of nitrogen, though it is difficult to say without using the non-protein constituents of the blood as a criterion, how much of this increase is really due to better elimination. These events are likewise in many respects characteristic of the nitrogenous metabolism of infections. They are likewise characteristic of the metabolism which follows artificial introduction of reducing substances for the production of experimental nephritis. Reducing substances are toxic in proportion for their avidity for oxygen, regardless of whether they are simple substances like uranium nitrate, or belong to the more complex bacterial cellular toxines, or are the structural units of the protein molecule—all of which disturb the respiratory quotient of the cell by the withdrawal of available oxygen, which should be used in other more normal reactions.

These associations lead us immediately to a consideration of infections as causative determining factors in the initiation and maintenance of nephritis, which will be the subject of the next paper.

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much of the toxic power of the mother-substance to this intermediate body which is not normally present. If, however, glycocoll is introduced into the molecule, there is oxygen saturation, no appropriation of cellular oxygen and the whole appears in the urine unchanged. No symptoms arise even with massive doses. (See Dakin—*Journ. Biol. Chem.*, 1909, v. 414.)

# BACTERIAL VACCINES IN EAR, NOSE AND THROAT INFECTIONS.

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IN discussing the therapy of autogenous vaccines in infections of the ear, nose and throat, it is impossible not to consider the relation of focal infections of the ear, nose, throat and mouth to systemic disease. Metastatic infections are as frequent and so serious with initial infections in this region, that we can never afford to lose sight of their possibility. The character of the focal infection offers no clue to a prophecy of secondary infection. If we would be safe, we must in every instance be watchful, and be prepared to meet such a contingency. Much has been written on this subject and much has been learned from our study of this large class of bacterial disease. Today this field offers a great opportunity for clinical study and laboratory experiment. For instance, rheumatism is no longer an obscure disease, but a concrete clinical picture of a focal infection, with its sequelae. By co-ordination of clinical and laboratory study we have been able to elucidate many pathologic conditions which were formerly obscure. We cannot accept a therapy which is not based on the diagnosis of the pathology of the disease. Autogenous vaccines meet this requirement.

When confronted with an infection of the ears or of any part of the upper respiratory tract, it is imperative that we determine at once the character of the infection. Several cultures may be needed to make a complete diagnosis of the bacteria active in any given infection. The entire technic attendant on the securing of a vaccine which shall completely represent the infection, must be perfected in every detail, if we are to expect therapeutic results. In acute infections the time element is important. An autogenous vaccine can be prepared in thirty to forty hours. This eliminates the objection most frequently made to the employment of autogenous vaccines. Intelligent use of stock vaccines requires a culture for diagnosis, and requires at least half of the time needed to prepare the vaccine. The other objections, such as expense, and inconvenience, are not worthy of consideration. Our first culture may not represent all the infection, but repeated cultures and more careful technic such as the use of plate culture, the planting in the first instance of a number of fields of different media will obviate this in most instances.

The staphylococcus growth often obscures the streptococcus. The bacillus mucosus capsulatus, the streptococcus mucosus and the micrococcus catarrhalis, may also grow so profusely that no other bacteria can be isolated. If a vaccine is made up from such cultures, and used, it will often be found that a second culture taken will be entirely free of, or contain only a small growth of these bacteria, if any be present. In acute infections it is essential that we secure our cultures at the onset of the invasion whenever possible; for instance, a culture taken at the time that the membrana tympani is incised will give us a vaccine much more potential than one taken twenty-four hours later. The use of a platinum loop and care to avoid contamination are assets often overlooked. The cotton swab is mentioned only to be condemned.

Securing the causative bacterium rather than the contaminating bacteria is essential. The time ensuing between the taking of the culture and the placing of it in the incubator should be short. Pocket incubation is not recommended.

The recognition of the constantly changing character of the bacteria in a given infection, indicates the need for repeated cultures for vaccines if we expect to have a vaccine to meet the progress of the infection.

The acceptance of Rosnow's demonstration of the transmutation of bacteria is not essential to the acceptance of this viewpoint. Repeated cultures of a given infection demonstrate clearly that the cultures and the strain are constantly changing. If this were not true a properly selected stock vaccine would be indicated. The knowledge that we cannot take a culture, diagnose the bacteria present, and then select a stock vaccine containing the same species and strain as our culture, has ruled out stock vaccines as a specific therapeutic measure. The little bottle purchased at the drug store may be all that the label signifies, but it cannot be said to contain the species and the strains we require in any given infection. Its ready procurement may be tempting, but this is a poor recommendation.

That we are constantly experiencing brilliant results with autogenous vaccines cannot be competently denied. That we sometimes fail to get such results is due, I believe, either to faulty technic in securing the culture and making the vaccine, or to our inability to secure a culture representative of the infection.

It is essential that the practitioner enlist the services of a competent bacteriologist to direct him in his technic as well as co-operate with him in the practical side of vaccine therapy.

The ear, nose and throat man is called upon, not only to take care of local infections, but also to co-operate with the internist in those cases in which the sequelae of the focal infection are present. There is an interrelation here, which if properly taken care of will often bring relief to the patient which would otherwise be denied him. There is no department of medicine and surgery which stands alone. We cannot give our patients justice unless we give them the benefit of diagnostic and therapeutic co-operation. The internist should appreciate even more perhaps than the specialist, that focal infection of the ears, nose, throat and teeth cause metastatic infections more frequently than focal infections elsewhere in the body. I have mentioned the teeth because they are so frequently the seat of the primary focus, that the specialist must of necessity make their examination a part of his routine in every case. He will, of course, have recourse to a competent dentist in case he should find the teeth at fault. The fact that the patient has recently been to a dentist should not preclude such an examination.

It is not essential for the purpose of this paper to describe in detail the focal infections or to more than mention the possible sequelae. It is impossible to have the so-called "cold in the head," influenza, any of the acute exanthemata or in fact any acute infectious disease, without the likelihood of a focal infection developing in the upper respiratory tract or ears. This should always be borne in mind as an early diagnosis and proper treatment gives the best opportunity for a prompt elimination of the focal infection and lessens thereby the percentage of cases in which serious sequelae develop.

The metastatic infections which may, and frequently do result from these focal infections, are as follows: Septic endocarditis, septic arthritis, septic pneumonia, septic nephritis, septic iritis, septic osteomyelitis, septic myositis, are among the most common, but there is no part of the body which is immune. Direct infection of the gastro-intestinal tract by the swallowing of pathogenic bacteria, is also a frequent occurrence. Any invasion of pathogenic bacteria in this region may develop an active focus. If we could always eliminate the focus early, we would never have the chronic foci to deal with. This happy result we cannot always obtain, but it is our goal.

The bacterial vaccines are, I believe, a valuable asset in bringing about the much desired result. The culture tube is a part of our equipment which we cannot afford to be without.

For several years I have used bacterial vaccines in my work, but it was not until 1912 that I seriously adopted autogenous vaccines as an adjunct in dealing with infections of the ear, nose and throat. At the present time I consider their use an asset which I could ill afford to do without.

## CASE REPORTS

### GROUP 1—*Middle Ear Infections, Acute.*

*Case a*—A. H., adult. First seen Jan. 19, 1914. AD. O.M.P.A., M.T., red and bulging. M.T. incised. Culture showed pure streptococcus. Ear discharged profusely and received careful treatment, opening in ear drum being kept open and douching at frequent intervals. Feb. 1st., the discharge was still profuse, canal swollen and painful, but no mastoid involvement. On this date 1 c.c. vaccine containing 50,000,000 streptococci was given. When seen on Feb. 5th, the discharge was practically stopped, opening in ear drum scarcely visible, swelling of canal almost gone, pain entirely gone. Vaccine 2 cc. Feb. 9th, ear in good condition. M.T. closed, no swelling of canal present.

*Case b*—M. C. H., adult. First seen July 25th, with acute infection of both middle ears. Incision of both M.T., and cultures taken. Discharge profuse from both ears, with mastoid tenderness over one side. This condition continued, and on July 30th, 1 c.c. of autogenous vaccine containing 50,000,000 streptococci and 100,000,000 staphylococcus aureous was given. Discharge was considerably less the next day, and four days later, when the second dose of vaccine was given, both ears were almost dry and the mastoid tenderness had disappeared. Two days later the ears required no further treatment.

*Case c*—Six years old. First seen May 19, 1914. A.D. O.M.C.A. with tenderness and slight swelling over mastoid. M.T. incised, and culture taken showed staphylococcus albus. Discharge profuse and on May 25th, 1 cc. of vaccine was given. May 27th, opening in ear drum was closed and mastoid was free of symptoms. A second dose of vaccine was given on May 29th.

*Case d*—R. W., adult. First seen on Feb. 6th, 1914. A.S. O.M.P.A., M.T. incised and culture taken showed staphylococcus albus. Discharge was profuse and pain active, and on Feb. 13th, 1 c.c. of vaccine was given. Feb. 15th 1 cc. was repeated. Feb. 20th, 2 cc., and on Feb. 23d ear was well.

*Case e*—B. C., age 11 months. First seen Feb. 27th, 1914. Both O.M.P.A. Incision and culture. Treatment consisted in douching frequently and keeping both drums freely open. Temperature remained high and discharge profuse, and on Mar. 6th vaccine was given. Mar. 11th both ears were dry and temperature was 99. 3cc. of vaccine was given at this time.

*Case f*—M. S., adult. First seen May 2d, 1914. Sinus infection left side and A.S. O.M.P.A. M.T. incised and culture showed streptococcus. Discharge from nose and ear was profuse, and on May 8th began to have pain in elbows, hips and knees. May 10th, 1914, 1 c.c. of vaccine containing 50,000,000 streptococci was given. Patient was in bed and totally incapacitated. May 13th, ear dry and pain in joints was almost gone, discharge from nose less, patient out of bed. 2 cc. vaccine given at this time. May 16th, very little discharge from nose. M.T. of normal color, no joint pains. Patient well. 2 cc. given.

*Case g*—E. H., age 6 years. First seen Feb. 9th, 1915. A.D. O.M.P.A. Incision, culture taken, showed streptococcus mucosus and streptococcus pyogenes. Tonsils and adenoid very marked. Ear discharge continued and on Feb. 15th, 1 cc. of vaccine was given; Feb. 17th, discharge stopped, perforation closed, drum nearly normal color.

The foregoing cases are representative of a considerable group of acute middle ear infections and the results with autogenous vaccines. These cases have undoubtedly been greatly helped by the use of the vaccines. My personal experience has been that the acute middle ear infections respond well to the vaccines if the vaccines are used early. Another group of acute middle ear infections have been treated with vaccines in which the cultures were taken later and the results were not so good. There have been some in this group that I have been unable to say that the course of the middle ear infection was influenced by the use of the vaccines.

### GROUP 2—*Chronic Middle Ear Infections.*

*Case 1*—R. H., adult. March 10th, 1913. Has had discharge from both middle ears, following scarlet fever at the age of eight. Examination of both ears showed old perforation of both M.T., and considerable discharge. Following usual treatment the ears continued to discharge. Dec. 1st, 1913, autogenous vaccines of staphylococcus albus given. In all 14 doses were given, and on March 30th, 1914, both ears were dry and have remained so.

*Case 2*—A. G., age 14. First seen July, 1909, at which time he had had a discharging ear for several years. Tonsils and adenoid operated Aug., 1909. Following this neglected treatment and ear continued to discharge. Did not see patient again until Oct. 4, 1913, at which time the same ear (A.S.) was discharging profusely. Adenoid negative. Cultures taken Dec. 20th, 1913, and first dose of vaccine given Dec. 27th, 1913. In spite of the fact this patient did not give the ear proper syringing, the discharge gradually stopped and the ear was dry March 7th, 1914. The vaccine contained the staphylococcus aureus. This ear remained dry without treatment until April 20th, when the discharge appeared. Cultures taken this time showed the pyocyaneus. Vaccine made from this was given without any apparent effect on the discharge. I have tried vaccines in a considerable number of O.M.P.C.

These two cases illustrate my experience with vaccines in these cases of chronic middle ear infection. In connection with this class of cases we have to consider the pathology of each case before passing judgment on the value of the vaccines. In all of these cases I have given them the advantage of the elimination of all adjacent pathologic conditions, such as tonsils, adenoid and nasal obstruction with infection. To date onlv a few of these cases have been helped by the vaccines.

### GROUP 3—*Cases of Acute Middle Ear Infection with Mastoid Involvement.*

*Case 1*—M. S., age 10. First seen Feb. 9th. 1914. A.D. O.M.P.A. Swelling of canal marked. Swelling and tenderness over mastoid tip with thickening of periosteum. A.S. O.M.P.A., incision. Culture taken showed staphylococcus only. Vaccine containing 500,000,000 given Feb. 12th, 1914. Re-action marked. Immediately following the re-action there was decided improvement in the patient's general condition. Temperature came down, discharge from both ears became less and the tenderness and swelling of mastoid tip became appreciably less. Second dose given Feb. 14th, 1914. Feb. 17th, 1914, mastoid entirely cleared up including periosteal thickening, and discharge almost stopped. The temperature which had been 101 dropped to normal after first dose and remained so. Feb. 28th, A.S. dry. Mar. 21st, A.D. dry.

*Case 2*—Age 17. First seen April 28th, 1914. A.S. O.M.P.A. Swelling and tenderness over tip of mastoid. Tonsils and adenoid marked. Incision of M.T., and culture taken showed staphylococcus albus and streptococcus. May 5, discharge profuse and mastoid condition the same. Vaccine given at this time. May 12th, ear entirely well.

There have been a number of this class, and the results have been apparently brilliant. It would be easier for the attending physician to operate on these cases, as the responsibility of carrying along such cases is great. In the presence of opposition to operations it is interesting to note that such cases do get well without operation. We have all seen this long before vaccines were heard of.

### GROUP 4—*Vaccines Following Mastoid Operations.*

*Case 1*—R.R., age 6. First seen Feb. 9th, 1915. Following a discharge from both ears for a period of two weeks mastoid infection on the left side. A.D. discharge profuse, sagging of posterior superior canal wall marked. A.S. mastoiditis. Operation same day. Culture from mastoid showed pure streptococcus. A.D. M.T. freely opened, carrying the incision through the sagging wall to the bone. Adenoid removed. Child very ill, and blood showed little resistance. Feb. 13th, vaccine containing 50,000,000 streptococci was given. Feb. 15th, mastoid wound free from pus, no discharge from canal of A.S., discharge from A.D. much less. Feb. 20th, A.D., dry, mastoid wound clean. This patient was very ill and I am convinced that the vaccine was a material help.

This represents a class which I believe can be greatly benefitted by the use of vaccines. I have two cases of post-operative mastoid in which the vaccines had no influence on the local condition, but even here there was marked improvement in the general condition of the patient.

### *Hay Fever and Asthma.*

C. W., age 19. First seen May, 1913. Has had hay fever and asthma for several years. Examination showed tonsils and adenoid, nasal obstruction with infection of all sinuses. Proper surgical relief was given previous to using the vaccines. The culture from the nose showed a few staphylococcus albus and many streptococci. The vaccine here undoubtedly cleared up the sinus infection, and the hay fever and asthma have not returned. We have all cured hay fever and asthma surgically without the use of vaccines, but I believe them to be a valuable adjunct.

Here again we have a group of cases in which vaccines can be made use of to good advantage.

### *Arthritis.*

M. E., age 26. First seen Mar. 19th, 1914. Has had rheumatism involving various joints since childhood. Last attack began one month ago and was worse than any she has had for the past four or five years. Has had much muscular pain as well as marked involvement of the shoulders, elbows, hips, knees and finger joints. Has had recurrent tonsilitis, but with one exception not severe enough to go to bed. Examination showed considerable nasal obstruction and chronically infected tonsils. Culture from tonsils showed streptococci and a few staphylococcus aureus. Mar. 28th, 1914, tonsil enucleation with local anaesthesia. Apl. 5th, vaccine given. In all ten doses were given. Report to date states that she has not had the slightest indication of her rheumatism.

G. N. P., adult 30. This case was quite similar to the previous one reported. Here the culture showed a pure streptococcus, and the vaccine was given with only local treatment of the tonsils. The result was just as good as the last one reported, but the chances of recurrence are very good. The tonsils should be enucleated.

These two cases represent an important group. The vaccines are a decided asset following the removal of the focus.

### *Recurrent Erysipelas of the Face.*

P. S., age 49. First seen March 9th, 1911. For at least four years he had had recurrent attacks of erysipelas of the face. The attacks have been so frequent that the face has become permanently swollen. With the attacks he is very ill, with high temperature and terrific pain in the head. Between the attacks he is not well. The headaches are constant and he is now totally incapacitated. Examination shows a large, well-developed man. Face markedly swollen from chin to hair line of forehead. The upper lip is at least one and one-half inches thick. The induration of the skin and sub-cutaneous tissue is marked. The nose shows an active infection of both frontals, both sphenoids and all the ethmoid cells on both sides. The entire middle meatus is filled with masses of chronic inflammatory tissue, the anatomical structures in this region being welded in one solid mass. Pus discharge profuse. Cultures showed pure streptococcus. This man had had his nose operated previous to coming under my care, but it was not well done. He had had much treatment, including the phylacogens. The latter made him very ill and benefited him not at all. The man was in a very serious condition. He had not had any relief whatever from the attacks and the constant headaches were almost unbearable. Proper surgical relief was entered upon, which consisted in the removal of all the above-mentioned masses in the upper part of the nasal passages and the elimination of all the ethmoid cells with the opening of the sphenoids and frontals. All the work was intra-nasal. This took considerable time and the vaccines were employed before the surgery was completed and continued at intervals. Repeated cultures were taken for the vaccines and the staphylococcus albus and mucosus capsulatus were found, but never to the exclusion of the streptococcus. The improvement in this case was very marked following the above measures. Following a dose of vaccine one could note the decided improvement in the nasal condition, the condition of the face and particularly in the patient's general condition. The patient was entirely cured of his recurrent erysipelas, the headaches disappeared and the swelling of the face gradually disappeared, and he went back to active life. That the vaccines greatly helped this case I feel very sure. At one time I stopped the autogenous vaccines and used Erysipelas Phylacogen, but did not get any material benefit from its use.

I have used vaccines in acute and chronic infections of the various sinuses. There have been some acute cases which cleared up more quickly than similar cases usually do. In some of the acute cases it would be difficult to say that there had been any helpful effect locally, but the general condition was undoubtedly improved in all cases. I have used the vaccines in some chronic sinus infections in which I was sure they had no influence whatever locally. I have employed the vaccines in these cases very frequently. I have had some results which make me very enthusiastic for their use. In other cases they have accomplished nothing.

Vaccination to immunize against colds without proper relief of the pathologic conditions present in the nose, only serves to discredit vaccine therapy.

### GROUP 5—*Acute and Chronic Sinus Infections.*

*Case 1*—M. H. B., adult. First seen Dec. 27th, 1912. Diagnosis of acute empyema of left antrum with history of attack beginning twelve days ago. Has had recurrent attacks for several years with much pain. Usual treatment was instituted and daily irrigation of antrum for ten days failed to clear up discharge entirely. Following this antrum was irrigated at intervals, but discharge continued. On May 24th, an autogenous vaccine was given and the discharge became decidedly less. Five injections of vaccines were given and discharge was entirely cleared up.

*Case 2*—J. W. W., adult. First seen Sept. 29th, 1914. Left frontal sinus infection of six weeks' duration. Obstruction of opening of sinus marked due to anterior end of middle turbinate and a high deviation of septum. Septum was resected and left middle turbinate removed. The sinus was irrigated frequently, but the discharge was continuous. Oct. 22d, 1914, autogenous vaccine of staphylococcusalbus was given. A number of vaccines were given with no apparent effect on the discharge. It was noted that no reaction followed any of the doses. Feb. 6th, 1915, autogenous vaccines from a second culture were given. This time the culture showed a staphylococcus aureus. Following four doses a decided improvement in the discharge was noted and when last seen Mar. 11th, 1915, the infection was practically cleared up.

*Case 3*—M. E. C., adult. First seen October 5th, 1912. Diagnosis sinus infection involving both frontals and both anterior groups of ethmoid cells. History indicated that there had been recurrent attacks. Present attack began July, 1912. Pain and local tenderness was marked. Mar. 24th, 1913, the condition had not improved. Operation was refused. Culture taken at this time showed streptococcus and staphylococcus. First vaccine given Mar. 31st. Four doses were given and the infection entirely cleared up and patient free of symptoms. Observation June 23d, 1913. Good result continued. Observation Oct. 11th, 1913, showed that the cure was permanent.

*Case 4*—J. S., adult. First seen October 25th, 1913. Three months ago had second upper left bi-cuspid extracted. Sinus leading from tooth socket into antrum discharging pus. Antrum irrigated per nasal passage. Left frontal and left anterior ethmoids discharging profusely. Culture taken showed staphylococcusalbus and Friedlander bacillus. Appropriate surgical measures were instituted consisting of the removal of left middle turbinate and intranasal opening of antrum. Nov. 10th, 1913, vaccine was given. Dec. 13th, the opening in the tooth socket had closed without direct treatment, and the infection of the sinuses was well.

*Case 5*—F. B. H., adult. First seen Dec. 16th, 1914. For the past month has had discharge from the right side of the nose. Has had much pain and pressure on the same side. Diagnosis of sinus infection on right side involving frontal and both groups of ethmoids. The middle turbinate was removed and a culture was taken on Jan. 7th, 1914. First vaccine was given Jan. 10th, 1914 and on Jan. 27th, 1914, there was no discharge in evidence. Subsequent observations proved the relief to be permanent.

In the foregoing reports of cases I have avoided many details which I am sure would not be of interest to any one other than the man taking care of the case. In all instances proper surgical relief has been the real treatment and vaccines have been merely therapeutic adjuncts. There have been some cases in which vaccines have been used in which surgery was not employed. The vaccines should not give us a false sense of security. Instead of reporting a large number of cases it seemed to me the purpose of this paper would be best served by reporting a few representative cases. During the period in which I have been using autogenous vaccines I have treated many similar cases without their employment. My deductions are based on a comparative observation.

In conclusion I wish to state as an opinion formed following an experience with autogenous vaccines in about 200 cases of ear, nose and throat infections, that we have in them a valuable adjunct when employed in connection with proper surgical relief.

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## OCTOBER MEETING

**Notice in detail on page 428.**

# EDITORIAL

## "WE'RE DOING MORE THAN FAIRLY WELL."

AN editorial writer in the N. Y. Times discusses under this title the relative death rate in the city and country districts with especial reference to degenerative diseases. He concludes that the reason why urban death rates are diminishing all over the country in contrast to a nearly stationary rural percentage is because the young move to the cities and the normal death rate from old age must consequently persist, and then goes on to say, "as for the increase of deaths from the degenerative maladies, one has to die at last of something and naturally it is to diseases of this class that we yield now that we are fairly well secured from those more "acute" that used to be so effective in keeping the population down." He points out that because we are producing record-breaking athletes our physical condition is good, all of which is apparently written in response to a correspondent who deplores the increase of degenerative diseases as indicating a general impairment of the national health.

To a certain extent an editorial writer may be considered as writing *ex cathedra* in the same sense that the pulpit orator speaks with authority largely because he is, for the time being at least, free from the interruption of those who may dissent and who cannot controvert him on the spot. It seems fair, however, to take issue with the general theorem that has been quoted. One important reason for the fall in city death rates has been overlooked—the lessened infant mortality due to clean milk and improved sanitation, conditions which do not hold in most country districts because of the lax enforcement of sanitary laws. Could the precautions against typhoid fever, diphtheria and other preventable diseases be enforced with the same thoroughness in the rural as in the metropolitan districts, there would be a genuine decrease in the rural death rate. Evidently the editorial writer has forgotten that the absolute relation of old people to the young does not vary so greatly between the city and the country as to affect the death rate materially and he seems equally to overlook the significant charts of the last United States census which show a steady fall in most of the causes of death but an absolute increase in deaths from cancer and the diseases of degeneration. He concludes his editorial in these words:

> "In praise of fresh air too much can hardly be said, but about 'exercise' an enormous amount of nonsense is talked and written. For whatever one does habitually, the doing of it is exercise quite enough. More is about as apt to be harmful as beneficial."

To dismiss the value of rational exercise so curtly is unfair. Housewives are habitually busied in the duties of their house work, but they are not exercised by it, they are wearied without being helpfully tired. The monotony of daily clerical work to which the bulk of our urban population is condemned, cannot by any stretch of imagination be classed as exercise, and the daily grind of fighting for standing room in crowded vehicles in going to and from their places of business is a potent factor in inducing nervous and physical breakdowns that figure largely in the shortening of life. If this country is producing excellent athletes it is also exacting a toll of mental stress in the unnatural conditions that our artificial way of living has brought about. The slogan of efficiency is but another way of saying that we are exacting more work from workers who are being systematized into automata. Our business hours are too long, our methods are too exacting, our habits of eating and drinking are bad and there is real need for alarm about the increase in degenerative diseases that results therefrom. The American people must awake to the need for a more rational way of living. It is essential for a healthy race that all its units should observe rules of healthful living; that they should balance the mental stress of their daily struggle for existence with careful eating, proper hygiene and healthful exercise. No one will pretend that the Greek method of so many hours spent daily in the gymnasium is essential for every citizen, but it is self-evident that muscle waste must be excreted and physical exercise is essential to that end. The nation that keeps its bodies clean and its muscles hard is the nation that shows the largest percentage of wholesome brains and in these days of hysterical fadism the gospel of sound bodies is an essential premise to the production of well-balanced minds. By all means let us recognize the increase in degenerative diseases and instead of scoffing at it treat it with the seriousness that it demands. H. G. W.

## "THE FIREMAN'S PERPLEXITY."

DO you read the Medical Pickwick? If not, you should. You would learn from it what it was that perplexed a fireman and how Dr. James Peter Warbasse has manufactured a tale like unto Sinbad the Sailor, or the Thousand and First Tale from Arabian Nights. Its charming irony would be destroyed if taken from the setting of the tale, but its great moral lesson will perhaps not suffer much if translated into the homelier phrases of editorial comment. In brief the story is this:

A great physician and an humble fireman find themselves cast away in, or shall we say translated to, a virgin country, where the people, an artless pastoral race, are gravely perplexed over the question of the proper treatment of fires. The great physician explains how doctors are diversely educated, launched upon the world without proper support and how by their individual efforts they succeed in the end in attaining varying degrees of efficiency so that the rich get the benefit of the best, those less well off of the mediocre and the very poor of the least efficient. He advises the fireman that rival schools be founded for the education of firemen and that only graduates of these schools be permitted to practice the art of fighting fires and warns that unauthorized persons will strive to usurp this privilege. The fireman points out how in the land from which he came the people employ firemen as an organization, choose those who are fitted after examination, pay them all a living wage and strive in every way to prevent fires. The natives finally decide that they will choose the latter method as more likely to provide them with efficient service.

From this discussion careful ratiocination leads us to suspect that this story is really a fable with a moral from which we are to construct the syllogism that because the paid, trained fire department affords the best service for the care of our temporal belongings, a paid, selected and community-controlled body of physicians will give the best service in the care and prevention of our physical and mental ailments. Is Aesop right? Is it good logic to compare material things with human bodies? Granting the inconsistencies that lead up to and surround the practice of medicine as it is now constituted, are we justified in attempting to reduce to a system human peculiarities and human nature and to treat them as so much wood and cotton and paint and brick and mortar, even though we recognize how inflammable the human animal is? Such a plan would mean that first of all we must sweep aside individuality and sternly suppress that intensely human attribute of personal likes and dislikes—we must eradicate Dr. Fell. Following upon this feat we must constitute an omniscent board of control that shall say who shall and who shall not be candidates for medical practice. No mere examination can determine it for in the body of practitioners there are some who develop a talent for clinical observation, others who find the fullness of their accomplishment in the laboratory, some who are by nature surgeons and a few who possess the peculiar qualifications that fit them to treat diseases of the mind, and it is only by the experience of years that such special aptitude makes itself known. Will it ever be possible to say to the beginner in medicine, you are to be an alienist and you a surgeon and you a clinician? Will it ever be possible to parcel out any body of citizens and say to them, you must place the care of your body in the hands of the man whom we have chosen for your district and you must place your love and confidence unreservedly where we bid you? These are but a few of the questions that must be solved before a feasible plan can be formed to reduce the practice of medicine to terms of a municipal fire department. One may not say that they are insoluble but it is evident that a great change must take place in the average citizen before he can be led to believe that the sum of medical wisdom can be embodied in a district physician. And where is the incentive for self improvement for the doctor?

We greatly fear that the land where the fireman was perplexed is Utopia, a place that lies east of the sun and west of the moon.

H. G. W.

## FALL MEETING

The Fall Meeting of the Associated Physicians of Long Island will be held at the Hotel Nassau, Long Beach, on Saturday, October 23rd. Former experience has proven this to be an ideal place for the Fall Meeting, since the proprietors of the hotel are desirous of entertaining us in the most hospitable fashion and at a reasonable cost. Large parlors will be reserved for the Scientific Meeting and adequate provision made that we may enjoy a good dinner. The details of the meeting will be mailed later by the Secretary.

GUY H. TURRELL, M.D.,
Smithtown Branch, L. I.,
President.

LEFFERTS A. MCCLELLAND, M.D.,
78 McDonough Street,
Brooklyn—New York.
Chairman Entertainment Committee.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

The 204th regular meeting of the Brooklyn Gynecological Society was held in the Amphitheatre of the Long Island College Hospital on February 5th, 1915. The meeting was under the management of the Obstetrical-Gynecological staff of the College and the papers were illustrative of the work of the department. The president, Dr. O. Paul Humpstone, requested the Professor of Obstetrics and Gynecology, Dr. John O. Polak, to occupy the chair.

1. A Review of the Cesarian sections in the Hospital for the past two years: Dr. A. C. Beck.
2. Extra-peritoneal Cesarian Section; Technique, Indications, Advantages: Dr. F. C. Holden.
3. Three cases of Pubiotomy: Dr. R. A. D. Gillis.
4. Demonstration of the Gauss Apparatus for Aortal Compression: Dr. Polak.
5. The Treatment of Papillomatous Growths of the Ovary after the Pozzi Method: Dr. C. R. Hyde.
6. The Treatment of Painful Ovaries: Dr. W. P. Pool.
7. A Case of Ruptured Ectopic Gestation in the Rudimentary Horn of a Bi-cornate Uterus: Dr. L. S. Schwartz.
8. Epithelioma of the Cervix, Report of a Case: Dr. H. B. Matthews.
9. The Incidence of Syphilis in the Gynecological Clinic: Dr. R. F. Barber.
10. The Treatment of Retroversion in the Out-Patient Clinic: Dr. Gordon Gibson.

### A Review of the Cesarian Sections in the Hospital for the Past Two Years.

*A. C. Beck, M.D.*

From November, 1912, to Nov., 1914, 27 cesarean sections were performed in this hospital. As the limited time allotted me will not permit a complete analysis of these cases, I shall present for your discussion some of the more important observations made after reviewing their histories.

All but eleven of these operations were performed on multiparae.

The indications were as follows:

Neglected transverse with high retraction ring in 3 cases.

Central placenta previa in 1 case.

Eclampsia at term with undilated cervix in 2 cases.

Large fibroid in the pelvis in 1 case.

Post operative dystocia in 2 cases.

In one of these the cervix had been amputated. In the other the cervix had been amputated and a ventral fixation had been done.

The remaining cases, 18 in number, were performed for pelvic dystocia. Of the 18, six showed absolute contraction, the diagonal conjugate measuring 9 c.m. or under. In the remainder the contraction was less marked but all of the patients had had tests of labor in previous pregnancies, these labors having been terminated by craniotomy or difficult instrumental deliveries which resulted in still births.

Twelve cases were admitted into the hospital in labor. For the following reasons I have considered these as handled in contradistinction to the clean ones which went into labor in the hospital:

Two came into the hospital with an arm protruding from the vulva.

Three had forceps attempted at home on floating heads.

One had a prolapsed cord replaced before admission.

One was packed for hemorrhage from placenta previa.

Five had repeated vaginal examinations at home, without proper preparation of the vulva.

Of these handled cases, six, or fifty per cent, had febrile puerperia and two, or 16 2-3 per cent, died of peritonitis. This frequent morbidity and high mortality clearly shows the great risk in performing the classical conservative cesarean section in handled cases and inspires the hope that the extra peritoneal cesarean section will show us the way out of our difficulties in this class of cases.

When the puerperium was afebrile, as it was in 18 cases, the average duration of the patient's stay in the hospital after operation was slightly under 16 days. In the febrile cases it was 30 days.

The total maternal deaths were 3. Two of these died of peritonitis as has been mentioned. The other was a case of eclampsia. She had four convulsions before and six convulsions after operation, death occurring 7 hours after operation.

In all but 4 cases the fetal heart was in good condition before operation. It was 165 in one, 180 in another, 140, but irregular, in another, and could not be heard in a fourth. In the latter, however, fetal movements were felt on vaginal examination and a living baby in good condition was obtained by section.

In many of the earlier cases considerable difficulty in resuscitating the child was encountered. In these, ether had been used throughout the operation. Lately we have been using chloroform until the child is delivered and ether subsequently. Under this plan the babies seem to be resuscitated more easily.

Three babies died within the first 24 hours after delivery One was a premature infant, the child of the central placenta previa case. The second was the one whose heart rate was 140, but irregular. In this case a large fibroid in the pelvis prevented the head from engaging, thus rendering section necessary in spite of the fact the fetal risk was a bad one.

The third death occurred 24 hours after delivery. For this we were unable to find a cause.

## Extraperitoneal Abdominal Cesarean Section.

*F. C. Holden, M.D.*

The short time at my disposal this evening for the presentation of these two cases will not permit me to give in detail an historical survey of this operation and its various technics. Suffice it to say that the procedure was proposed by Jorg in 1806, and Thomas in 1870 performed a similar operation, which was given the name of gastro-elytrotomy. This last operation was done twice successfully by Skene in 1876, and in 1878 the American Gynecological Society sanctioned the operation and gave it the name of laparo-elytrotomy. Nicholson (Surgery, Gynecology and Obstetrics, Feb, 1914) presents a very exhaustive survey on the subject as a whole.

*A. C.*—Para O—Black, 34 years. Admitted Dec. 27, 1914, 2:20 a. m.

*Previous History*—Entirely negative.

*Obstet. History*—Two miscarriages at 3 months, 2 and 3 years ago, respt.

*Menst. History*—Normal. Last March 30, 1914.

*Present Preg.*—Slight nausea, headache and edema for past three months.

*Examination*—Heart and lungs negative. Pulse 70. Temperature 99. Abdomen. Vertex. L.O.A. medium size fetus. Fundus 1" below ensiform. Head pressed in brim, not engaged. Uterus very tight. Fetal parts not palpable. Fetal heart R. & L.L.Q. 150.

*Pelvis*—Spines 26; crests 29; trochanters 32; ext. conj., 19; diag. conj., 10; bis-I., 8.5.

*Vaginal*—Perineum intact and firm. Vagina small. Cervix dilated to size of half dollar, effaced, soft, drawn tightly over head from which large thick caput protruded from external os. Membranes ruptured. Vertex in brim, not engaged. Poor flexion.

*Pains*—Every 2-4 minutes—variable in strength and duration. Uterus did not relax between pains.

*Urinalysis*—1019; acid; albumin + +; sugar; no casts; few red blood cells and white blood cells.

*Blood pressure*—150.

*History of Labor*—Pains began Dec. 25 at 7 p. m. Examined by outside physician at that time, revealed that pains were weak and irregular and that cervix was uneffaced and closed. Vertex floating. During the following day her physician stayed with her as the pains were slightly stronger. Throughout the day he made repeated vaginal examinations, more than twelve in number, through an unprepared vulva. In the evening of December 26th the cervix became effaced without any dilatation of external os which her physician styled "Full dilatation of the internal os." This was his indication for rupturing the membranes, and giving one ampule of Pituitrin. The uterus responded to the pituitrin, but as the head did not appear the dose was repeated in one hour. This too without result except to cramp the uterus, drain off the liquor amnii, tighten on the fetus and to dilate the cervix to the size of a half dollar and pull it tightly over vertex, wedged in brim in poor flexion, causing a thick caput to protrude through the external os. The accoucheur mistook this for a shoulder, and as he had started with a vertex presentation he became worried and sent patient to the hospital for "forceps."

*Treatment*—Patient given nine hours in which to dilate cervix and engage head. During this time she had fair uterine contractions with more or less continuous spasm. As there had been no advance during this time an abdominal extra-peritoneal cesarean section was decided upon as the best procedure.

*Anesthesia*—Chloroform and oxygen until child was delivered, then ether.

*Operation*—The skin, fascia and recti muscles were separated vertically from the symphysis to the umbilicus and a vertical incision made in the parietal peritoneum. The uterine peritoneum was then incised vertically in the median line of lower segment, beginning at the lowest point of the vesico-uterine plica extending up to the point at which the peritoneum becomes intimately attached to the uterine wall. A space of about 10/12 cm. is available for this incision. The peritoneum of the visceral layer was then mobilised somewhat laterally, which was easily done by blunt dissection, and then the two peritoneal flaps, visceral and parietal, are stitched together and the end of the sutures left long and clamped. A vertical uterine incision was made into the lower segment and the child was extracted, with some difficulty, from the tight uterus. The placenta was delivered at once and the uterus closed by interrupted No. 2 chromic sutures at minute intervals, the first suture being placed at the lower angle of the wound and the second at the upper. It was found that large curved Hagedorn needles were very suitable for this work. The long ends of the sutures already placed in the two peritoneal folds were brought together and tied, cut, and the abdominal wall closed in layers without drainage.

*Puerperium*—Uneventful—no shock and no abdominal distension. Maximum temperature 100° (on 4th day), pulse 105.

*Condition of Baby*—Male, length 50 cm. 3000 gms. Head 9-9-11.5-14. Cried almost spontaneously, required very little resuscitation.

*Condition on Discharge*—Primary union of abdominal wound. Uterus healed and adherent to abdominal wound, lengthening the vagina and pulling cervix close to symphysis. Uterus well involuted, with lessened mobility, not sensitive. Paramentrium negative.

*Baby*—Weight on discharge 3410 gms. Condition good, gaining weight rapidly.

*R. S.*—Para. II. Hebrew. Age 30. Admitted Dec. 15, 1914.

*Prev. History*—Rickets, diphtheria, rheumatism and heart disease. Operation for pelvic trouble and appendicitis, Dec., 1907. Wound broke down and subsequently a keloid was removed from scar.

*Obstet. History*—Puerperal sepsis followed labor 4 years ago. Two labors, instrumental with living babies. One miscarriage six years ago at three months. Both children alive and well, 8 and 4 1-2 years respectively. Weight at birth unknown.

*Present Preg.*—Menstruated last April 3d, 1914. Vomiting in morning for five months. Edema of both feet for past four months.

*Examination*—Heart, tachymedia with basic murmur; lungs, negative; abdomen, fundus just below ensiform. Marked hydramnios. Fetal parts poorly felt. Fetal heart heard; *presentation,* vertex, L.O.A., head floating above brim; *pelvis,* spines 24, crests 26, tro. 30, ext. conj., 19.5, diag. conj. 12, bis. I., 8.5.

*Vaginal Exam.*—Pelvic floor lac. to anus with general incision of vagina. Cervix multiple lacs., rigid, scared, uneffaced and closed. Vertex floating above brim.

*Urinalysis*—Albumin +, sugar. No casts, or red blood cells. White blood cells.

*Blood Pressure*—130.

*Labor*—On December 26th, 1914, induction of labor attempted by small doses of pituitrin without result, except that cervix dilated enough to allow membranes to be stripped. Pituitrin again administered on December 27th, result *negative* except for a few pains. Same treatment on December 29th without result. On the same day membranes ruptured artificially to relieve abdominal tension and distress of breathing. This accompanied by small doses of pituitrin failed to induce labor.

December 31st—Vagina packed firmly with gauze. No pain.

As patient's temperature rose to 101°, pulse 130, respiration 40 on

January 1st, it was decided to empty the uterus by extraperitoneal cesarean section. Chloroform being taken poorly the anesthetic was changed to ether. Incision and procedure as in the former case. Child easily extracted. Placenta previa. Wound closed without drainage.

*Puerperium*—Febrile coming to normal in thirteen days.

January 8th—Expelled large quantity of foul-smelling pus from vagina.

January 9th—Wound dressed and infected area at lower angle opened and half pint of foul pus removed.

Temperature normal from 13th to 16th of January. On 16th and up to the 22d had chills and irregular fever with swelling, pain, and edema of right leg.

Diagnosis—Thrombo-phlebitis. From January 22d to 28th patient returned to normal, and discharged in good condition on Jan. 28th.

Child—Female. Weight 3210 gms. Head measured 9-9-11.5.14. Resuscitated with difficulty by Dr. Matthews. Fed artificially on formula, and did very poorly at first.

Discharged in good condition and gaining on January 28th, at which time she weighed 2706 gms.

*Conclusions*—Inasmuch as our experience of the two foregoing cases has indicated to us that Nicholson's conclusions are exactly in accord with ours to date, I cannot do better than quote him verbatim:

"The extraperitoneal suprasymphyseal cesarean section is an addition to the obstetric armamentarium.

"Its chief indication is the 'neglected case' or one that is mildly infected. Since the prognostic differentiation between the various degrees of septic infection is a matter of uncertainty, the operation, in the words of Sellheim, is 'of the nature of an experiment in many cases.'

The operation is absolutely contra-indicated in the seriously infected case.

"The performance of the operation in clean cases is attended with good results in experienced hands; convalescence is more smooth and less hazardous than after the classical procedure.

It is a more difficult operation than the classical, not only in gaining entrance to the uterine cavity, but also in the delivery of the child; the closure of the uterine wound is less difficult than in the Sanger method.

"There is less blood than is usual in the classical procedure.

"The transperitoneal technique is to be preferred to the true extraperitoneal because of ease of performance, less interference with the bladder, and the avoidance of contamination of the retroperitoneal and preperitoneal tissue areas.

"The preferable technique is the modified Veit-Fromme.

"Subsequent pregnancy and labor are usually not influenced adversely; repetition of the procedure may be more difficult and in some cases it may be impossible.

"The bibliography is by no means complete, but simply comprises a few of the more important papers on the subject which have appeared since 1907. It is interesting to note that in the year 1907 there were but four articles noted in the Jahresbericht für Geburstchifte und Gynakologie. Of these there were two by Veit and two by Frank."

## Three Cases of Pubiotomy.

*R. A. D. Gillis, M.D.*

It is my privilege to present for your discussion three cases of pubiotomy performed here recently with the hope that they may present an interesting contrast with cases of like nature previously treated by cesarian section, of which Dr. Beck has already spoken to you, and with high forceps and craniotomies which seem to be in vogue in many obstetric clinics.

Mrs. P., Russian, age 26, para 2, previous history negative. Obstetric history, two spontaneous labors. Last menstruation, Aug. 20, 1912, estimated date of confinement, May 19, 1913. Pelvis, spines 27, crests 28 1-2, trochanters 30, external conjugate 20 1-2, diagonal conjugate 11, bis-ischial 10.

Labor: Patient went well into labor at her home June 1st, 1913 at 10 a. m. Examination revealed a vertex presentation in L.O.A. The membranes ruptured spontaneously at 4 p. m. The second stage began at 9:30 p. m. At this time the head was above the brim, slightly overriding the symphysis, and on this account the patient was brought into the hospital and allowed four hours of test of labor. At 11:30 p. m., there was no advance and the fetal heart was 136. At 1 a. m. still no advance and fetal heart 150. At 2 a. m. the mother was in good condition except for some thining of the lower uterine segment but the fetal heart had risen to 166. On this account it was decided to deliver her as soon as possible. A Gigli saw was passed and the bone cut through. The head immediately entered the pelvis and was easily delivered by medium forceps. There were no injuries of the cervix or vagina.

The baby cried spontaneously, weighed 8 lbs., and had a bi-parietal diameter of 10.5 cm. The head was found to be well ossified and of the type that will not easily mould.

The puerperium was afebrile. The patient complained of very little pain. She was allowed to sit up on the fourteenth day and both mother and child left the hospital on the 29th day in good condition.

Mrs. O., colored; age 37; para 5. Previous history of rheumatism and heart disease. Labors; five instrumental deliveries after long labors. The third was still born. The others are alive and well. Lacerations were not repaired. Puerperia normal. The children weighed about seven pounds at birth.

The last menstruation was on Feb. 10th, 1914, the estimated date of confinement being Nov. 17th, 1914. The patient vomited throughout the whole of her pregnancy. The heart and lungs, blood pressure and urine were found to be normal. Examination revealed a vertex presentation in L.O.A. position, head floating. Pelvis, spines 22, crests 25, trochanters 30, diagonal conjugate 9.5, bis-ischial 10.5.

Labor—Patient was admitted to the hospital on Nov. 16th, 1914, having weak pains every twenty minutes. The fetal heart was 148, the cervix was thick, admitting one finger and the membranes were ruptured. At six P. M,, the pains occurred every ten minutes and were stronger. The fetal heart was 140. These pains continued throughout the night causing a slow dilatation. At ten A. M., Nov. 17th, the pains were occurring every five minutes and were strong. At this time the cervix was effaced and dilated to the size of a silver dollar, but the head was still riding above the symphysis. The fetal heart had risen to 160 and was irregular. The mother's pulse was 130 and her temperature 99.8 F. On this account it was decided to deliver her by pubiotomy. After cutting through the pubic ramus forceps were applied to the head, the cervix cut anteriorly with scissors and the child easily extracted. The cervix was repaired. There were no injuries to the vagina. The baby was resuscitated with difficulty, it weighed 7 lbs. and had a biparietal diameter of 10.5 cm. The puerperium was afebrile, the patient got out of bed on the tenth day, carried trays for the other patients on the 12th day, was discharged on the 18th day and went to a dance and enjoyed it before a month had passed.

Mrs. K., Russian, age 30 years, para 3:

She had had two spontaneous labors and one instrumental with a living child. Her menstrual history was indefinite.

Examination revealed a fat pendulous abdomen, vertex presenting in R. O. P. position with the head floating. The fetal heart was 146.

Pelvis: 26-28-32-21.5-11.25-8.

Labor: The patient went into labor at home on Jan. 19th, 1915, at 4 A. M. She was examined frequently by her family doctor. On an. 20th, at 1:30 P. M., the sent her to the hospital for a forceps operation. At this time both mother and child were in good condition. The cervix was effaced and dilated to the size of a silver dollar and the head was riding above the symphysis in poor flexion. There was a slight edema of the scalp. The pains were of fair strength, occurring every 3 to 5 minutes. Postural treatment was instituted to correct the poor flexion. At 5:30 P. M., the cervix was fully dilated with the head still riding on the symphysis, the caput increased in size and with more extension of the head. After four hours test of labor there was no advance and the extension had increased to that of a brow presentation. The lower uterine segment was thined considerably and a contraction ring had formed above the umbilicus. The fetal heart was 150. On catheterization bloody urine was obtained. It was then decided to deliver her at once by pubiotomy. The bone was sawed through, the head was flexed manually and pushed into the brim from above from which it was easily extracted by medium forceps. The placenta was removed manually. There was very little hemorrhage and no injury to the cervix or vagina.

The baby was easily resuscitated, weighed 8 lbs. and had a bi-parietal diameter of 10 cm. The puerperium was afebrile. The mother and child are in excellent condition, the mother sitting up in a chair for the first time today.

In conclusion I must say that these cases are not proposed in competition with cesarean section. The indications for the two are as different as the results. All pubiotomy cases when properly selected, leave the hospital sooner or later. All ceserean section cases do not as has been shown you by Dr. Beck. It is an operation performed in the interests of both mother and child where the choice lies between a very difficult, and even impossible high forceps operation, a craniotomy on a living child and a pubiotomy.

(The first two cases walked into the clinic, the third was brought in on a stretcher.)

## The Treatment of Papillomatous Growths of the Ovary After the Pozzi Method.

*Clarence Reginald Hyde, A.M., M.D., F.A.C.S.*

Our attention has been called to this method by the recent reading of Pozzi's brochure, published in 1904, and also, by a case in our service in the wards of the L.I.C.H. which has afforded us an opportunity to study more closely, not only Pozzi's technic, but the views of other operators.

Briefly stated, Pozzi's plan, after section of the abdomen, is to remove as much of the papillomatous growth as possible, and if there is no ascites, not to drain. Should later observation of the case indicate a recurrence, the abdomen is to be opened a second time, as much of the recurrence removed as possible, and, if ascites, drain. Even a third or fourth section may be necessary; and with due attention to the steps of Pozzi's technic, recovery of the patient may be expected, provided there is no carcinomatous invasion. Even with this invasion, termed "generalization" by Pozzi, the life of the patient may be prolonged over a long period. He likens his technic to that employed in cases of tubercular peritonitis.

The general opinion has been that simple papilloma is either malignant or semi-malignant, and that it is in some way allied to carcinoma. The so-called malignancy of the simple papilloma really refers to a group of symptoms which has nothing in common with the invading destructive properties of carcinoma, but is simply the result of its liability to cause extensive ascites, and to become distributed and implanted in the form of numerous new growths throughout the peritoneal cavity: in time, symptoms of pressure and obstruction occur, and nutrition is so far interfered with as to produce a condition closely resembling a cachexia.

Metastases from simple papilloma, in the sense in which they occur in carcinoma, have been noted only in the rarest instances. There is no way of distinguishing purely adenomatous growths (papillomata) from those which are carcinomatous, except by microscopical examination after removal. This cannot be done at time of operation. Nor can papilloma at time of operation be diagnosed when the papilloma is confined to the interior of an ovarian cyst. The practical conclusion to be drawn from this statement is, that a simple looking ovarian cyst is liable to be papillomatous, and even carcinomatous. An ovarian cyst, therefore, should be removed as soon as possible after being recognized, and all possible care taken not to soil the peritoneum, either by rupture of the cyst wall during enucleation, or during a vaginal examination. We should never approach any ovarian cyst with too much indifference.

That papilloma simplex has been cured by operative procedure is a fact chronicled by numerous observers. But it remained for Pozzi to formulate a definite proposition as to the operative treatment of these tumors, and to crystallize into a working formula the clinical evidence of his own experience. He was the first to establish a standard basis on which to work, and to lay down positive rules by which we might be guided when we encountered such tumors.

There are those of us who can recall occasions when the abdomen has been opened and diffuse papilloma of the ovaries found, with involvement of the uterus, peritoneum, and adjacent structures; operators were at once prone to close the abdomen. One of Pozzi's reported recoveries was just such a case, sent to him by a prominent New York gynecologist in 1903. The latter gentleman on opening the abdomen found a diffuse ovarian papilloma and promptly closed the incision. He referred the case to Pozzi, who operated, and the patient recovered. We have personally assisted at such cases and have seen the abdomen closed, the operator believing the case hopeless. In reviewing the literature, the opinion is unwillingly forced upon us, that had these operators sifted the facts as presented to them, by a critical review of cases reported by reputable authorities, and which information was theirs only for the reading, that their technic and ideas would have been materially modified. Facts were then at their disposal and command, to which they paid scant, or rather no attention; or, had entirely escaped their observation. And although Kelly in 1898, six years before the appearance of Pozzi's article, called attention to numerous well-recorded cases, authenticated as to dates, names of operators, and the findings in the pathological reports, until the publication of Pozzi's monograph, no definite nor well-established rules had been laid down as to the detailed and scientific treatment of these papillomatous ovarian cysts, innocent or malignant. We had abundance of clinical evidence, some from American, but the majority from Continental surgeons, that operation *might* cure, but it remained for Pozzi to bring us out of the maze, and point out definite facts from which he drew the following conclusions:

1st: Papillary tumors of the ovary (cystic or solid) must not always be considered malignant. Some never undergo malignant degeneration, and some do not recur after removal. Some relapse after a long period, but locally, without metastases.

2nd: A careful distinction must be made between carcinomatous generalization (which takes place through lymphatics and blood stream), and between simple grafts, which result from contact or from the growing on to the peritoneum of detached papillary vegetations of the ovary. This process is benign and can be compared to the grafting of papillomas and warts of the skin.

3rd: Some of these tumors undergo a malignant degeneration which is for a time limited, but can later extend all over the mass, and at last bring on a real generalization with cancerous metastases. Before this last period and at the outset of malignant transformation, it is impossible to discern it with the naked eye, and microscopical investigations are needed. The prognosis is always uncertain in operations of this kind before thorough pathological examination. Even this examination may lead to misrepresentation *if it has not been carried out all over the tumor,* for the degeneration can be limited to a very small part of the growth.

4th: When positive symptoms of malignancy (cancerous cachexia or visceral metastases) are missing, one must act as if these tumors were benign and remove as large a portion as possible of the neoplasm. The disseminated growths or even small parts of the papillomatous tumor detached and lost in the peritoneal cavity may disappear; in other cases they will be the origin of local recurrence. But these relapses can be successfully treated by secondary operations.

5th: The frequency of successive invasions of both ovaries by papillomatous tumors indicates that the adnexa should be removed on both sides, even if one is healthy, especially in women who are near the change of life. In young women, it would be better not to remove a non-diseased ovary.

6th: In bilateral tumors, operative technic will be greatly improved by performing sub-total hysterectomy, according to the case.

7th: Drainage is not necessary when cysts have no outside vegetations and when there is no ascites. In cases of ascites, it is better to drain for a while the peritoneal cavity. Incomplete removal or even an exploratory section in inoperable cases is often accompanied by a diminution of the ascites and with general and local improvement.

Pozzi's propositions, then, boiled down, mean this: On sectioning an abdomen and finding papilloma simple or benign, without evidence of generalization, or as we would call it, carcinomatosis, excise the growths, removing everything; and if no ascites, nor vegetations, do not drain. If recurrence, re-open the abdomen, remove as much of the recurrent papilloma as possible, and if no ascites nor supernumerary vegetations, do not drain. One may reopen 3 or even 4 times, as shown by Pozzi's case reports, and recovery may follow. The interval between these successive reopenings is measured entirely by symptoms present, such as ascites, long continued pain, emaciation, progressive weakness, and signs of the presence of the growth or its renewed increase, as demonstrated by abdominal examination and vaginal touch. There is no definite rule laid down as to any exact time to re-open. It may even be a year before it is necessary to section the patient again.

If on opening the abdomen, there is generalization present, that is carcinoma, it can be recognized by the following signs: ascites, hard lardaceous masses, extensive adhesions, and large blood vessels. In such cases drain. Pozzi stipulates a Mikulicz handkerchief with three or four gauze inserts. Our own experience has taught us to substitute a large cigarette drain, or preferably a recurrent glass drainage tube in preference to the Mikulicz handkerchief, owing to the difficulty in removing the latter, which becomes extensively adherent to the intestines. Our own Mikulicz handkerchief could not be removed for nearly two weeks. When ascites reappears, repeat this procedure. Such cases may be carried along for some time. Pozzi reports one case carried along this way, and comfortably too, for 14 years, and thinks that this is not a discouraging result.

If a woman is near the menopause, remove everything. If she is young and unmarried, or young and married, and desirous of children, or is unmarried but with prospects of marriage, save one ovary and tube if not diseased, also the uterus, provided there is no generalization.

This last proposition of Pozzi's seems to us not only open to discussion but to frank criticism, and would appear to be the one weak link in his chain of argument. For, the border line of innocence and malignity in such cases can not always be determined, even at operation, a fact which Pozzi himself admits. The desire for children must be outweighed by the gravity of the pathology present, and should not be catered to because of sentiment. Why incur the risk or take the chance of its not being malignant in face of our knowledge that it is not possible at operation to state whether we are dealing with simple papilloma or with one that is just on the border line? While we are all inclined to conservation and the avoidance of total castration of the female, this is no time to conserve.

We do not believe that many operators will share Pozzi's views on this proposition.

Microscopical examination of the removed tumor should be made in serial sections, as the malignant focus may be ever so small and located in one small portion of the ovary.

Enough has been said in this booklet of Pozzi's to fix our attention on a lesion which has been handled in a most hazy operative manner by most operators with the possible exception of Kelly. We never till 1904 had any rules to guide us when we encountered papilloma. Pozzi has given us a set.

A critical review of the "Index Medicus" for the year 1913, of many text books on Gynecology, and of late surgical publications, curiously enough, reveals that nothing is said regarding the treatment of papilloma. Mumford dismisses the subject with a paragraph of exactly nine lines. The other books discuss at length the pathology, but no rules are laid down telling us what to do. Kelly, on the other hand, as far back as 1898, gives a most scientific exposition of the subject, quoting Olshausen, Pfannestiel and Williams. He says that numerous well-recorded cases show that papilloma of the ovaries have been removed, with numerous implanted papillomatous masses in the peritoneum, and yet the patients have recovered and retained perfect health over a period of years without any increase in the growths left behind. But we found no mention by Kelly or by any other operator of the employment of the drainage method, or of successive re-openings of the abdomen or of any recognized scheme telling us what to do when we met such cases. We were practically told that such cases were hopeless. Kelly is the only one who gave us any definite facts, and, even he lays down no rules.

Pozzi's article, although written 11 years ago, seems to have escaped general and critical attention. His propositions are so clearly enunciated that it is worth our while to study them closely. Our operative work, if we operate at any future time on such a case, need not be done in the dark or by chance. For this, we should feel personally indebted to Pozzi.

## The Treatment of Painful Ovaries.

*By William P. Pool, M.D.*

It has been questioned whether the ovaries, unless they be much enlarged, or the seat of a gross lesion such as abscess or new growth, can be held accountable to any great degree for chronic pelvic pain: whether certain obscure dysmenorrheas, in which the pain is referred to the lateral regions of the pelvis, can be traced to the ovaries, and to what changes in the ovaries the symptoms are due: whether the variations in ovarian structure so often found are to be regarded as evidence of pathological conditions, or merely of different phases of the normal ovary.

The difficulty of reaching a conclusion upon these points is increased by the fact that there are so often associated with "ovarian pain" well recognized lesions of other pelvic organs which also give pain of a similar character. The cure of these lesions, such as the replacement of a retroversion or the subsidence of an inflammation of the uterus or tubes, not infrequently relieves the symptoms, while so far as can be discovered, the condition of the ovaries remains unchanged.

On the contrary, there are many instances when the removal of an inflamed tube, or the suspension of the uterus fails, wholly or in part, to effect a cure, unless some attention be given to the ovaries also. To what extent the ovaries have entered into such morbid process, and whether they have actually undergone anatomic change as a result of it, are matters not easy to determine by clinical means. But the imperfect results that often follow these partial operations form a basis for the belief that, while the primary causes of pelvic pain may be outside the ovaries, still they take a part, sometimes a very prominent part, in producing the symptoms.

Again there are cases of chronic pain and dysmenorrhea in which there is no gross demonstrable lesion of any pelvic structure aside from the ovaries. These are prolapsed, may be slightly enlarged, and are exquisitely tender.

In both classes (with and without other pelvic disease) there may be found the familiar and varying changes which characterize the much discussed fibrocystic, or polycystic ovary. To the earlier observers, beginning with Rokitansky, this ovary assumed a significance which was undoubtedly much exaggerated. They not only regarded it as a distinct pathological entity, having a definite cause and course, but also ascribed to it a far-reaching symptomatology, and while these opinions have undergone considerable modification, they still prevail to some extent to the present time. It has been maintained by others that this condition of the ovaries is not pathologic, and that it does not give symptoms of any kind. But when an ovary presents a hyperplasia of its stroma throughout, when its blood vessels are enlarged and tortuous and thick-walled, and when it holds imprisoned within its substance a multitude of follicular cysts, many of which do not contain normal ova, it seems within reason to consider such an ovary abnormal. And upon the evidence of such observers as Virchow, Gebhard, Abel, Kleb, Pfannentuel, Findley, and others, the pathological character of ovarian cystic degeneration seems to be clearly established. The conclusion reached by these investigators is that it is a distinct lesion caused by chronic ovaritis, which in turn is due to infection or passive congestion. In the former instance, the condition is complicated or preceded by an inflammation in some adjacent organ, as infection of the ovary is probably always secondary. In the latter, it may be entirely uncomplicated, and due to chronic stasis resulting from some obstruction in its circulation.

As to the influence of this condition upon function, there is little certain knowledge. It has never been asserted that a cystic ovary is necessarily sterile, though records, as well as histologic examinaion, show that in advanced stages of the disorder, its fertility is markedly decreased, or may be lost. The complicating influences of other pelvic lesions which so frequently coexist, make it difficult to arrive at any definite conclusion.

To what extent the function of internal secretion is affected is also doubtful, though it has been suggested that the neuroses that are so frequently found associated with cystic ovaries, may result from some diminution or pathological change in their secretion.

Pain and dysmenorrhea, however, are believed by most observers to be common accompaniments, though why it is that some of these ovaries cause pain, while others, equally affected do not, must of necessity be somewhat speculative. Why do some cases of retroversion of the uterus give rise to serious symptoms, while others of a similar nature give none at all? Local ovarian pain results from internal pressure upon the nerves by reason of the crowding of cystic follicles, and the contraction or rigidity of the thickened stroma, and such pressure is certainly increased by the obstruction and congestion of the blood vessels. Pain is also occasioned by external pressure of other organs upon the ovary when it is displaced or adherent. The variation of these conditions, particularly when influenced by position or adhesion, must explain the degree of local suffering. My own observation has been that in every case of cystic degeneration that has caused serious pain or dysmenorrhea, the ovaries have been prolapsed, or adherent, or both—conditions which predispose to circulatory congestion.

In reviewing the literature upon this subject, one may find justification for almost any conceivable form of treatment, from the practice of the earlier followers of Battey, who removed the ovaries, whether painful or not, upon the mere suspicion that they were abnormal, to the ultra-conservatism of those who refuse to recognize in the cystic ovary a pathological condition, and therefore let it entirely alone. The evils following total ablation in so many cases, became apparent long before their real cause was known, and a greater respect for the ovaries was the result. Now, with the recognition of the fact that the ovary is not simply an organ of reproduction, but that it has another, and perhaps equally important office—that it belongs to the class of ductless glands, the correlation of whose functions is essential to maintaining the equilibrium of the nutritive and nervous organizations—it is fully established that conservative treatment, whenever possible, is a necessity of gynecologic practice: that even when structure and function are deranged, the removal of the ovaries may cause more harm to the individual than the disease from which they suffer.

The problem is then, to save to the patient the functions of the ovary, and at the same time relieve the symptoms which it causes. It has often been said that true conservatism in dealing with cystic ovaries consists in leaving them alone; that since they are not the primary seat of the pelvic disease in the great majority of cases, it is sufficient to remove or replace the organ which is first and principally affected, and that, with the focus of the trouble eliminated, the ovaries will return to their normal state and function. That this practice has not met with general favor is probably due to the fact that it is by no means uniformly successful.

The methods of treatment which have been most generally applied are puncture and cauterization of those cysts which are near the surface, and resection of a portion of the cyst-bearing ovarian tissue. A discussion of the pros and cons of these procedures need not be entered upon here, and it is sufficient to say that both may fail to give permanent results for the obvious reason that they make no provision against a return of the lesion. An ovary that has been separated from adhesions may, and frequently does become adherent again. If it has become fibrocystic as a result of hyperemia it is not reasonable to expect any certain or lasting improvement in either its structure or symptoms, unless the hyperemia be relieved, and this is not accomplished by merely reducing its size. Of more importance than these measures is postural treatment, the object of which is to place the ovary in a position that will aid in restoring its circulation. To this end suspension has also been advocated and practised by many, but it seems that while its desirability is recognized, it is usually made incidental to other forms of treatment. The point that I wish to make is that suspension is the principal consideration, and that other measures should be incidental to it.

If it be true that pain results from circulatory pressure within the ovary, or from pressure from without, as in adhesion, any surgical measure, to insure its relief, must provide for equalizing its circulation, and preventing direct fixation to any adjacent structure. It must therefore meet the following requirements: 1. Sufficient elevation of the ovary to relieve its hyperemia. 2. The arrangement of its blood vessels in such a way as to avoid obstruction by kink or torsion. 3. Provision for a reasonable mobility, so that it may not drag or be dragged upon, and may not be pressed immovably against any other organ in the pelvis.

The ovary must, therefore, be suspended *by its ligaments,* at is proper level, and in a manner to hold its vessels straight.

That these objects are sometimes attained in an operation upon some other organ, is shown by the subsequent improvement in the position and symptoms of the ovary, but without special attention to its support, such a result cannot be insured. Suspension of a displaced uterus helps to raise the ovaries, though it does not always maintain them in good position. This is notably true of the Webster-Baldy technique for retrodisplacement. in which form of suspension the ovaries are frequently benefitted. But it has often been noticed that the benefit is of but short duration, that after a brief period of relief, the pelvic pain returns, and that upon examination, the ovaries are found to be enlarged, tender, and often adherent to the posterior aspect of the uterus or broad ligament. Distortion of tissues, and interference with circulation no doubt cause this condition, and the last state of such a case is worse than the first.

Gardner's method of suspending the ovary is open to a similar criticism. The shortening of the ovarian ligament recommended by him, brings the ovary close to the side of the uterus in an unnatural position, and may obstruct its blood supply, with the usual result. He has mentioned, as an advantage of his method, the mobility that is allowed to the ovary This is perfectly true until it suffers the effects of chronic hyperemia, when it is liable to become adherent to the uterus.

Suturing the ovary to the posterior aspect of the round ligament is a method of support which has found favor with some operators. This places it in a nearly normal position, insures its natural blood supply, and relieves it of passive congestion. But the procedure has one disadvantage: that of fixing the ovary immovably to another structure—deliberately creating an adhesion. Such adhesion is a possible source of pain.

Believing that better results may be obtained by suspending the ovary in a manner more nearly approaching its natural support, I have employed another technique in dealing with painful cystic ovaries. Since in all cases of prolapse the ligaments are elongated, an effort is made to take up their excess length without doubling or distorting the tissues.

The ovary is carefully freed from adhesions, if any be present, with the finger or scissors. Gentleness in manipulation is always desirable in ovarian

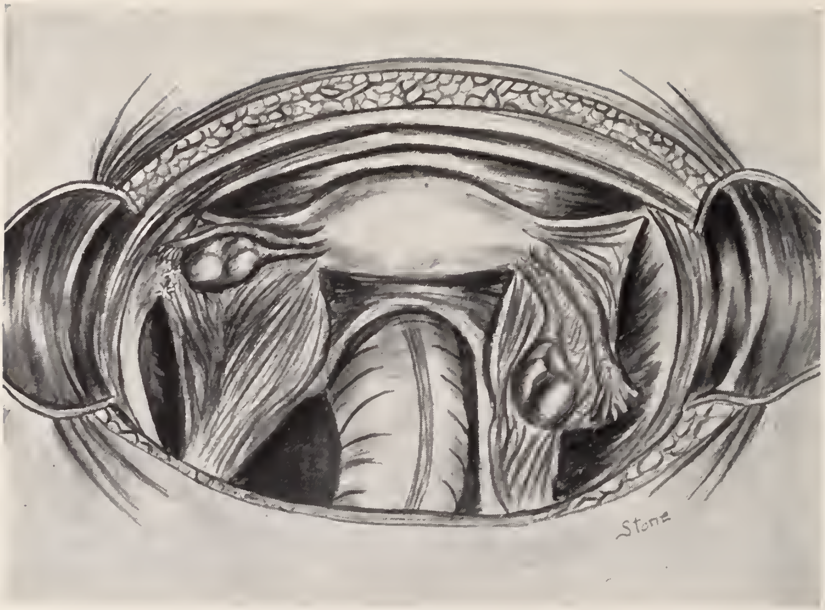

Fig. 1.

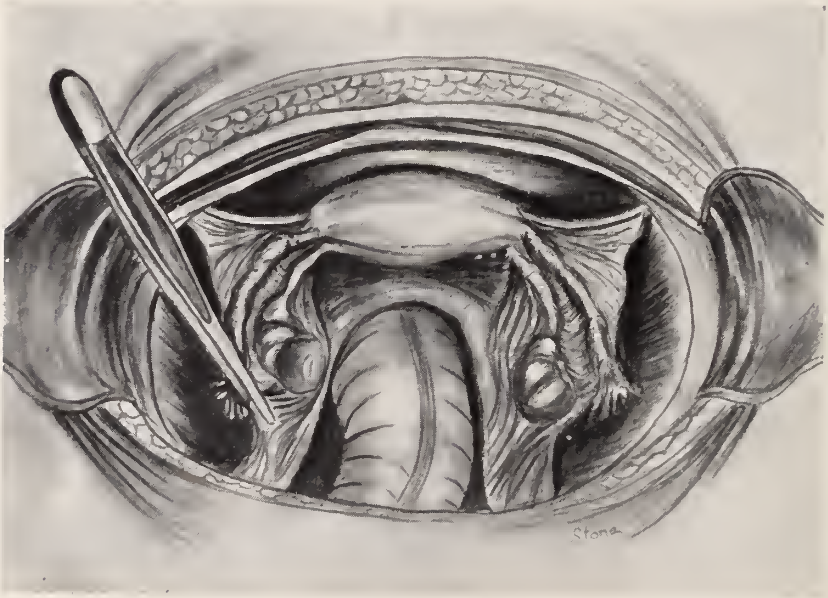

Fig. 2.

surgery, and therefore it is never picked up with a clamp, but is lifted into the wound between the fingers, and with the least possible pressure. A clamp is not applied to its ligament through fear of bruising tissue and injuring blood vessels. Resection is not a routine practice, and is only done to remove a single large cyst, or when by reason of multiple cysts, the ovary has so enlarged, and become so heavy that it is deemed best to reduce it before suspending. No arbitrary rule as to size is followed, but when resection is done, that portion is removed which seems to contain the most cysts. A wedge-shaped piece is excised with a knife so that the edges of the wound may be clean and straight. No attempt is made to remove or puncture internal cysts, as recommended by Reynolds. The cut surfaces are united with fine catgut, deep sutures being avoided unless necessary for hemorrhage. This is usually slight, and often it is possible to get a dry wound and good coaptation with very superficial sutures. Care is taken to leave no raw space upon the surface which might invite adhesion. The ovary is now suspended by the infundibulo-pelvic ligament to the lateral pelvic wall, at a point a little above and behind the attachment of the round ligament. In order to select the most desirable spot for fixing the ligament, its extreme edge is grasped with anatomical forceps at a point near the ovary, and carried out to the wall. By this means it is possible to note the effect of traction upon the ovarian and broad ligaments, and care is used to choose a point which will give the ovary sufficient elevation, and at the same time avoid undue tension upon its supporting structures. To this spot of the parietal peritoneum the edge of the ligament is secured by two chromicized gut sutures. The result is that the ovary is raised out of the deep pelvis, swung between its ligaments, and disposed well to the side. It retains a sufficient mobility, and is not adherent to anything. The tube is straightened, and retained in its proper position and relation, and still more important, this suspension, by lifting and spreading out the broad ligament, favors the relief of pampiniform varicosities, which are not infrequently associated with ovarian congestion.

This routine has been applied to all of my cases of painful cystic ovaries for several years, and there are available at the present time the results of seventy-six ovarian suspensions.

In eighteen, prolapsed and cystic ovaries were uncomplicated by any other pelvic abnormality, while in fifty-eight this condition of the ovaries was accompanied by various other lesions. The complicating lesions, one or more of which were found in each of these cases, were: chronic inflammation of the tubes, one or both; uterine displacements; uterine fibromyomata; enlarged veins in the broad ligaments; cervical and pelvic floor lacerations; and adhesions between the ovaries and other organs, without definite evidence of the origin of the inflammation at the time of operation.

Symptomatic cure, or marked improvement has been obtained in sixty-seven (88 per cent). Nine were unimproved.

Space does not permit a complete analysis of the results of this series, but a consideration of the uncomplicated cases is of particular interest, as they show, in the first place, the extent to which the polycystic ovary may be in itself the cause of pain, and secondly, that it is possible to relieve this pain by the simple suspension of the ovary.

This series of eighteen cases is of course too small to be conclusive in itself, still the results obtained in it may have some useful significance. Fourteen (77 per cent) have been cured or greatly relieved of both chronic distress, and the exaggerated pain just before and during menstruation. Of the four who failed to be benefited, two were pronounced neurotics, whose pelvic symptoms were only a part of their general complaint, and they might properly be excluded from this class. But as no other pelvic abnormality could be found, they have been reckoned as uncomplicated. One presented ovaries of smaller size, which were rather of the cirrhotic type. Small cysts were present, but there was a predominence of hard fibrous tissue. The case was apparently of long standing, and probably one of the small class in which total extirpation offers the only certain means of relief. In the remaining failure the ovaries did not remain at their new anchorage. At the end of convalescence examination showd the prolapse of both, and the symptoms were entirely unrelieved.

Resection of one or both ovaries has been done in forty-two of these cases, but only for the purpose of reducing the size and weight preparatory to suspension. This step, except as it favors permanent replacement, does not seem to be essential to the success of the operation, and the results in simple suspension have been quite as good as when part of the ovary was removed. As a result of resection, temporary post-operative enlargement and tenderness of the ovary have commonly been noticed. Such swelling has also followed when the ovaries were surrounded by dense adhesions, and much manipulation was required to free them. It has, however, subsided promptly under the influence of improved circulation. It has not been observed after simple suspension in uncomplicated cases.

Not every case, in which the result has been regarded favorable, has been completely relieved of all symptoms. This has probably been due, in part, to imperfections in technique, whereby the ovaries have not been placed in the most favorable position. It has also been noticed that the type in which there is a great apparent increase of fibrous tissue is less amenable to treatment, and it is believed that in such ovaries the degenerative process has reached a stage that is beyond repair, and that perfect and painless function cannot be expected of them.

In those cases which were relieved, or in which there was a return of the symptoms, the cause for failure or relapse has been recognized in the local or general condition of the patient, and from the proportion of successful results it seems proper to conclude that in the painful cystic ovary there are present both an organic and a functional disorder, and that while complete restoration is not possible where there has been extensive anatomic change, still its functional derangement—congestion—may be improved by improving its position, and that many of the symtoms it produces may thus be modified.

## A Case of Ruptured Ectopic Gestation in the Rudimentary Horn of a Bicornate Uterus.

*L. S. Schwartz, M.D.*

The patient, 23 years of age, Austrian, was brought in on the ambulance to the Jewish Hospital on January 1, 1915, at 4:30 p. m. She is married two years, one premature birth of seven months baby one year ago. The child is living and well. Menses began at 14, 28-day type, profuse flow, eight-day duration. Since the childbirth the patient menstruated four times at irregular intervals, the last regular flow occurred on August 25, 1914. On September 25, 1914, saw a few blood spots, which continued for two days and were not accompanied by any pain or other discomforts.

About 24 hours before admission to the hospital the patient was suddenly seized with a sharp "tearing" pain all over her abdomen, she then became faint and had to be helped to her bed. In a few minutes the faintness passed away but the pain continued.

On admission the patient complained of weakness, shortness of breath and slight sticking pain in the abdomen most marked on the right side. She had not voided in 15 hours.

Examination: Patient presenting all symptoms of shock; pulse 128, soft very compressible, blood pressure 88 mm. of mercury; temperature 100.4. Vaginal examination revealed absence of any bloody discharge, and extreme sensitiveness on attempting to move cervix. Nothing definite in the fornices. Blood count: Red cells 2,300,000, white cells 20,000 and 42 per cent of hemoglobin.

The patient was immediately placed in high Trendelenburg posture. The vulva was shaved and externals thoroughly cleansed. Patient was then catheterized, six ounces being obtained and sent to the laboratory for examination. The patient having received a hypodermic of 1-4 grain morphine before transferring her to the ambulance was given 1-12 grain of morphine and ordered same to be repeated every four hours. Water by mouth was ordered given at frequent intervals.

No cleansing bath, enemas, saline by the rectum or preparation of the abdomen is permitted in such cases.

The patient was seen again in about one hour and was found to be resting quietly, pulse 120 and of better quality. Six hours later patient showed further improvement, blood pressure 90, pulse 120 and better quality. The blood pressure was taken and recorded every four hours; the pulse was taken and recorded every half hour.

The following morning the patient showed great improvement, the pulse came down to 108, the blood pressure went up to 120. With the improvement in the patient's condition and the rise in blood pressure it was decided to operate.

The patient was carefully transported to the operating room, spinal analgesia administered. The abdomen was cleansed with alcohol and ether and then painted with a 5 per cent tincture of iodine.

A median abdominal incision was made; free and clotted blood was found in the peritoneal cavity. A mass was brought into view which proved to be a rudimentary horn of a bicornate uterus arising low on the left side of the uterus about the level of the internal os. This rudimentary horn was about the size of a lemon and presented a rupture the size of a half dollar at its top and posteriorly which was covered by the products of conception. The left tube and ovary came off from the left side of this horn. The main horn was the size of a normal uterus having the right tube and ovary arising from its right side.

The rudimentary horn and the left tube were amputated, leaving the left ovary in place. The larger clots were removed, the peritoneal cavity was filled with saline and the abdomen was closed in layers.

The patient made an uneventful recovery. On discharge the blood examination showed: Red cells 3,110,000 with 55 per cent of hemoglobin. There was primary union of the wound and the uterus was in good position and freely movable. Parametrium was perfectly free of any exudates.

Conclusions:

1. We do not operate upon cases of ruptured ectopic during shock.
2. High Trendelenburg and enough morphine to keep patient quiet.
3. Patient is not disturbed by bath, enemas or preparations.
4. The pulse and blood pressure are watched carefully.
5. A rise in blood pressure to 120 means operate.
6. Spinal analgesia.
7. Blood clots are left in peritoneal cavity for it saves time and there may be hematinic elements in the clots which help patient's convalescence.

## Epithelioma of the Cervix.

### REPORT OF A CASE.

*By Harvey B. Matthews, M.D.*

Mrs. D., female, negress, born in the United States, 33 years old, married 11 years; no children; no miscarriages.

*Chief Complaint.*—Menorrhagia, metrorrhagia and general debility.

Family history is negative. Past history is negative. No syphilis, gonorrhea, rheumatism or tuberculosis. The menses began at 14 years of age, regular—28-day type, 4 to 5-day habit; no pain; normal flow. After marriage, she menstruated in the same manner until 6 years ago, since when she has been irregular, flowing every 2 to 3 to 4 weeks, 4 to 6 days, rather profuse flow, but without pain. Last period September 20th, 1914, since when she has had a persistent metrorrhagia of moderate degree up to the present time—*i. e.*, 6 weeks. No pain.

The present trouble coincides with the menstrual history just described, except that besides this she has had a more or less profuse leucorrhoeal discharge for 15 years with an occasional bearing-down lumbar backache. She has never complained of any kind of abdominal pain. There is extreme weakness and exhaustion from loss of blood during the past 6 weeks. The bowels are constipated.

Physical examination shows a small, thin, anemic colored woman, weighing about 90 pounds. The heart muscle is of poor quality, but there are no murmurs and no enlargement. The lungs are negative. Liver and spleen not felt. The superficial inguinal glands on both sides are moderately enlarged and not tender. No other superficial glandular enlargement.

Vaginal examination shows a normal non-parous introitus. The vaginal mucous membrane is normal to palpation, except that there is, in both fornices, the moderate protrusion of an indefinite pelvic mass.

The cervix shows a large proliferating cauliflower growth, more extensive on its posterior lip, which has apparently extended into both broad ligaments. The ulcerating area bleeds freely on manipulation. Motion of the cervix is limited in every direction. The uterus is small anteflexed, moderately movable anteroposteriorly, but very limited in its motion from side to side, owing to extensive indefinite masses in both broad ligaments. These masses are of about equal size, measuring 8x6x4 cm., with small, rounded, smooth nodules distributed over their surfaces. The tubes and ovaries are not palpable, but are apparently included in these masses.

*Diagnosis.*—Carcinoma of the cervix with extensive involvement of the parametrium. Inoperable by hysterectomy; cauterization the only hope.

The patient immediately entered the Long Island College Hospital for cauterization of this growth. On admission the blood count was as follows:

Red blood cells, 3,200,000; white blood cells, 11,800; haemoglobin, 50 per cent; differential not made.

On the fifth day after admission she was prepared for a Bryne-Percy cautery operation. Examination under ether, at this time, showed the supposed infiltration of the blood ligaments to be masses filled with fluid—probably pus.

Upon opening the abdomen this diagnosis was definitely confirmed. The uterus appeared to be free from any extension of the cervical growth and there was a narrow band of normal tissue between its lateral margins and the masses within the broad ligaments.

Another look at the cervix, for by this time tuberculosis had been suggested as a probable cause of the pelvic abscesses, still convinced the operator that cancer and not tuberculosis of the cervix was the correct diagnosis.

In view of the recent discoveries just mentioned, total hysterectomy now seemed to be the operation best suited to the case.

The patient's condition at this time was distinctlv bad—pulse 160 and of very poor quality. Morphia, gr. 1-4, was given and an hypodermoclysis under each breast was started.

Clamps were now quickly placed for hysterectomy. Upon opening the broad ligament mass on the left side about 6 ounces of brownish fluid mixed with creamy pus was evacuated. The same was done on the right side. There was no odor from the pus. Both tubes, which were "clubbed," and the right ovary were removed. The left ovary was firmly fastened by dense adhesions to the left pelvic wall and was not disturbed.

The cervix with a considerable amount of the vaginal vault was removed with the uterus. The pelvic glands were not examined and, hence, no attempt at removal was made. Drainage was accomplished by means of 1-inch strips of iodoform gauze leading from each abscess cavity to and through the opening in the vaginal vault. After the usual thorough peritoneal toilet, the abdomen was closed in layers.

The pulse at this time was 130 and of fair quality. She had absorbed 1100 c.c. of saline solution and was in better condition than at the beginning of the operation.

The temperature, after the first 48 hours, remained between 98.2 degrees and 100 degrees Fahrenheit, while the pulse rate varied between 90 and 120, until the eighteenth day after operation when the temperature went to 103; pulse 128. This excursion was due to a superficial infection of the abdominal wound. After the evacuation of a small quantity of pus, the temperature reached normal on the twenty-third day after operation. She was discharged from the hospital on the twenty-sixth day after operation in fairly good general condition, the abdominal wound healed, a small granulating cavity in the vault of the vagina with no evidence of recurrence of the cancer.

## PATHOLOGIST'S REPORT.

Pus from right and left abscesses sterile to culture. Guinea pigs for inoculation tests were not available. Stained smears of the centrifugalized pus show no tubercular bacilli present. A portion of the growth removed from the cervix shows epithelioma, with no evidence of extension beyond the cervical portion of the uterus.

The points of interest in this case are:

1. Error of diagnosis.
2. The source of the extra-peritoneal abscesses.
3. Limitation of the cancerous growth to the cervical tissues.

The diagnosis was wrong only as regards the extent of the infiltration of the growth. While cancer of the cervix was a correct and the most important diagnosis, yet if the extra-peritoneal abscesses had been discovered early, tuberculosis of the cervix would certainly have been considered as a probable diagnosis.

According to Cullen, of Baltimore, the clinical diagnosis between tuberculous ulceration, syphilitic ulceration and squamous-celled carcinoma of the cervix is, in the vast majority of cases, impossible, but he adds that, microscopically, the diagnosis is easy. Therefore, the diagnosis, in any event, would not have been positive until the pathologist's opinion had been given.

As to the source of the pus collections, Cullen states that "every supposed inoperable cancer of the uterus should be examined under ether before refusing to operate, for occasionally one is able to detect that the lateral thickening is due, not to an extension of the cancer, but to a coincident inflammation of the tubes and ovaries." These collections of pus, which were entirely extraperitoneal, were evidently not due to a coincident inflammation of the tubes and ovaries for these structures were entirely free from any inflammatory process. Therefore, if the infection and subsequent abscess formation were not caused by the continuity or contiguity of structures, it must have been due to an infection through the blood stream or lymphatic system, and such an infection is most likely tubercular. Lastly, the limitation of the cancerous growth to the cervix was evidently due to the fact that the diagnosis was made and operation performed before the growth had had sufficient time to infiltrate the parametrium and body of the uterus.

## A Report on the Incidence of Syphilis in the Gynecological Clinic.

*Robert F. Barber, M.D.*

, The detection of syphilis is an important factor in a gynecological clinic. The diagnosis, when made, should always be confirmed by the Wassermann test, not only for scientific reasons but also because of the social aspect of the case. An analysis of the histories of 600 cases recently admitted to the clinic showed 30 cases of syphilis, or one in twenty.

Besides the ordinary questions in history taking, special note was taken of sore throat, rheumatic joints and idiopathic headache. In this way 50 per cent of the cases were diagnosed by the history alone and confirmed by the blood test. Not one of these cases on physical examination manifested syphilitic lesions.

Twenty-five per cent of the cases gave no other history except the statement that they had had either a miscarriage, a premature labor or a macerated fetus. This was an interesting point because it emphasizes the point that the majority of syphilitic mothers carry their children to term.

Twenty-five per cent of all cases showed skin lesions distributed generally over the entire body.

Thirty-three and one-third per cent were easily diagnosed because they showed condylomata lata.

Three diagnoses were made on the history of headache alone. One of these cases especially worthy of note, was a woman sent to us from the medical department for a diagnosis as the headache was thought to be due to a retroversion. The history of the patient was again taken in the gynecological department. It clearly showed that the headache dated from a period four years previous, and just three months after marriage. The diagnosis of syphilis was made. Physical examination show no retroversion. Blood examination gave a four plus Wassermann. It is a type of case that makes the history of much value. The more we do in this line, the more we consider the history one of the most important parts of our work. A poor history will often defeat the diagnosis.

Up to three months ago the most unsatisfactory part of the subject was the treatment. Before that time cases were sent to the County Hospital for injection with salvarsan. Usually they refused to go, or did not go, and disappeared from view. The present method of treatment is much more satisfactory. The case is handled medically and through the social service department. When it is necessary to administer salvarsan we now refer the case to a special department of our own clinic, where the injection is made, and the patient is charged just the cost of the drug. At the same time the case is referred to the social service department, by means of which it can be followed up if necessary. In this way we are now enabled to keep in touch with our cases much better than before.

## The Treatment of Retroversion in the Out-patient Clinic.

*Gordon Gibson, M.D.*

During the past five years there have been admitted to one of the four departments of the Gynecological Clinic eleven hundred eighty-three women. Of these three hundred sixty showed varying degrees of retroversion, not including the cases of procidentia. These cases can be divided into three classes:

1. Those with movable retroversion without other lesions and those with movable retroversion with other lesions not in themselves demanding operation: for instance, a woman in the child-bearing period with retroversion and slight lacerations which in themselves do not cause much disturbance.
2. Those with adherent retroversion and those with movable retroversion associated with other lesions, which in themselves demand operation.
3. Those with movable retroversion associated with other conditions not

in themselves amenable to surgical treatment, such as gastroenteroptosis, etc.

It has been our teaching that it is not the retroversion, per se, that causes symptoms, but that the resulting hyperemia and hyperplasia caused by the faulty mechanics in the pelvis are the direct cause of discomfort, and that correcting the faulty mechanics by holding the uterus in proper position will restore the balance between the arterial and venous systems, remove the hyperemia and, in part, remove the hyperplasia, if the latter be not of long standing.

Of the 360 cases mentioned, 148 were of the first class, 193 of the second, and these were referred to the hospital for operation, and 19 of the third class. Only those cases belonging to the first class are considered in this report. Sixty women were fitted with pessaries. Many others might have been so treated but it has been the experience in this clinic, as well as in others where students are in attendance, that a woman will come once, be examined and advised, see the students and not return, so that, if we placed pessaries at the first visit all we would accomplish would be to lose our pessaries.

We teach that as much care must be used in fitting a pessary as the woman uses in fitting her corsets or her shoes, and that the fitting of a pessary is not simply the placing of that pessary in the vagina. Various types and sizes must be available and they must be moulded to fit the individual case.

Of these 60 women who had pessaries fitted, 27 could not be found. Of the 33 that could be traced all but five were personally examined; these five wrote answers to the letters instead of coming personally to the clinic. Of these 33 then, we found that 28 were relieved of their symptoms and five were not. This was a surprisingly large percentage and certainly indicates that much can be accomplished by this much-abused method of treatment.

It is interesting to note that three of these cases had been operated upon by various methods, had a return of their retroversion, came to the clinic, were fitted with pessaries and are at present comfortable.

## Discussion.

**Dr. Judd:** I have very little to add to what Dr. Pool has said. He has brought up an operation that I have not tried. My method is to either fasten the ovary to the outer end of the round ligament or the Barrows procedure. This latter is done by shortening the round and infundibulo-pelvic ligaments, making a slit through the shelf thus formed, through this slit the ovary is passed from below upwards and if necessary one or two sutures applied in the opening in the broad ligament to make sure the ovary does not slide back. For the purpose for which it is used I do not think we can improve upon this procedure. I shall be glad to try the operation from which Dr. Pool reports such a large percentage of good results.

**Dr. Hussey:** I am sorry I was not here to hear all of Dr. Holden's paper. I am not perhaps entirely in a position to discuss the subject. The question as it presents itself to my mind is this: what operation applies best to the greatest number of cases as we see them in our work and offers the best chance for immediate recovery and permanent good health of the mother, and for the saving of the child? I believe from an analysis of my own work and of the work of other operators that in the great majority of obstetrical cases the classical cesarian offers the best chance for the mother and child provided one factor is absent, and that is infection. When I know that infection is present I feel that a supravaginal hysterectomy offers the best chance. It is always a doubtful matter where a woman has been in labor for say twenty hours or more, and has been examined by several doctors. It is here that one hesitates and yet an operation of some sort is imperative. If you do a classical cesarian you leave a bad puerperium; if you do a hysterectomy you may get away with it, although you have a mutilated patient. My own experience teaches me that the uterus and abdominal wall are most susceptible of infection. If I knew the patient was infected I would take out the uterus, I would, no doubt, do a Porro operation. If she was infected I would feel that there would be less danger to the patient in a hysterectomy. If she was not infected the Porro operation is more difficult and more dangerous than the classical cesarian. That is my opinion, though I do not feel that I have had sufficient experience to be competent to judge. With regard to pubiotomy I think in a border line case it is safe, but if you are not sure as to the relations as to size a cesarian will bring a live baby, and this may not be true with a pubiotomy.

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# VARIATION AMONG BACTERIA IN RELATION TO INFECTION AND IMMUNITY.*

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WHEN we consider that the whole subject of bacteriology belongs practically to our own generation—that some of the pioneers in the study are still with us—and contemplate the phenomena that have been observed concerning bacteria, the facts that have been established in their relation to disease, and the changes wrought in medicine and surgery in the past few decades by laws formulated from these facts, we are astounded by the progress that has been made in so short a time. However, aside from surgical asepsis, the diagnostic aids afforded, and in instances where immuno-therapy has been established, little general knowledge of the subject is found in the rank and file of the profession. Discoveries that have had a practical bearing upon medical science have marked the steps of advance, and these have been graciously received. The work that has led up to these discoveries, the accumulated evidence from which conclusions have been drawn, is lost sight of. For this reason the majority of physicians fail to understand the principles upon which immunotherapy is based, and it becomes more or less of a matter of empiricism. In fact, it is only of late that there has been a tendency on the part of bacteriologists to study the bacteria from the view point of their general biological characteristics. Theobald Smith said: "It is what bacteria do rather than what they are that command our attention, since our interest centers in the host rather than in the parasite." It is the intention in this paper to review some of the recent work tending to show what bacteria do, and to discuss the relation these facts may have upon infection and immunity.

In the first place I wish to consider the variations to which bacteria are subject when under cultivation in the laboratory. One is early impressed in bacteriological work with the variability of strains of a given species of organisms, and soon observes variations in the same strain if kept under observation for some time. These variations may be either environmental or inherent in the organism. A number of studies have been made to determine the nature and extent of these changes, and many interesting facts have been brought out, showing that in some instances the change represents a fluctuating variation depending upon environment, and in others a transmutation amounting to organic evolution within the genus.

Rettger & Sherrick[1] attempted to produce strains of staphylococcus that would be resistant to solutions of mecuric chlorid. Broth cultures were diluted and treated with varying strengths of the solution for varying periods of time. These were then plated and broth cultures from the surviving colonies were treated in the same manner, and the process carried on for some time. At first the tendency was to decrease the resistance, so that few colonies were found on the plates. After the fourth experiment, however, the number of cocci that survived the bichlorid were materially increased. The resistance to bichlorid so acquired remained after six months.

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* President's address before The Brooklyn Pathological Society, Oct. 14, 1915.

Abbott[2] made similar experiments with staphylococcus aureus, using solutions of mercury salts and other chemicals. He found a resistance to the chemicals used, especially the bichlorid, and that the surviving colonies possessed an increased color production and an increased liquification of gelatin. There was a tendency to revert to the original type after 10 to 20 subcultures. He also observed the agglutinating powers of these strains as contrasted with normal strains. Rabbit's serum immunized to normal staphylococcus aureus was found to agglutinate normal staphylococci in a dilution of 1-1000, but did not agglutinate the chemically altered strains in even low dilutions. On the other hand, rabbit's serum immunized with the chemically altered strains readily agglutinate normal staphylococci but not themselves. In other words the chemically altered strains have lost the power to agglutinate, but retain the power to call forth agglutinins.

In the coli-typhosus group we have a large genus of bacteria which are differentiated principally by their powers to ferment different sugars, or by their immunity reactions. Recent work has shown that many of these intestinal organisms take on, by variation and selection, the power to ferment lactose, and that this group passes insensibly into the lactose-fermenters proper[3]. Dobell[4] has given a review of this subject from a general biological viewpoint. He quotes Massini[5] who isolated an organism of this group which grew white on Endo's medium.* After the third day of growth red nodules were observed in the colonies, and these increased in numbers on succeeding days. These nodes were daughter colonies within the parent colony, and when transplanted were found to ferment lactose. That is, a typhosus-like bacillus has changed, by inherent properties, to a colon bacillus with power to split lactose. The bacillus so altered retains its properties after transference to lactose-free media, and is unaltered by passage through animals, temperature changes, or by chemicals. He calls this organism the Bacillus coli mutabile. His observations have been confirmed by several others.

Twort[6] has converted B. typhosus to a bacillus which splits lactose and dulcite by growing for a period of time in a medium containing these sugars, and the organisms acquiring this power retain it after passage through guinea pigs and cultivation on media free from these sugars. Müller demonstrated that all typical races of B. typhosus behave toward rhamnose exactly as Massini's B. coli mutabile does toward lactose. They permanently acquire the power to split rhamnose. One hundred and twenty races were studied. With B. paratyphosus the reaction is the same toward raffinose.

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* Endo's medium is a nutrient agar to which is added sulphite of sodium and fuchsin. The sulphite decolorizes the fuchsin. The colon bacillus, by its acid production, restores the red color of the fuchsin, while organisms like the typhoid and paratyphoid give white or colorless colonies.

Sebenheim & Seligmann have produced four permanent races from one individual B. coli. One of these is a Gartner strain, one a similar strain but with different agglutinating powers, one a typical B. typhosus, and the last a strain like Massini's B. coli mutabile.

In the foregoing there appear to be direct adaptations to environment. In some instances there is a spontaneous change as in Massini's work. Most instances show that bacteria coming into contact with a carbohydrate which it cannot use so changes its metabolism that it is able to split the sugar and make it available for its use. Further the power of fermenting various sugars can be permanently destroyed in any of these organisms by acclimating them to media containing .1 per cent malachite green. Sir Lauder Brunton says that bacteria which secrete a peptonizing enzyme in a protein soil will secrete a diastatic enzyme when changed to a carbohydrate soil.

In an attempt to rear races of B. prodigiosus of increased or decreased color by selection of specially marked colonies Wolf met with no success. However, by growing this bacillus in various chemicals similar to the experiments of Abbott, color changes were produced which were permanent. With mercuric chlorid a colorless and a dark red race was obtained. Cadmium nitrate produced a permanent red and a reverting white race. He also changed a staphylococcus aureus to an albus after many transplants.

Eisenberg has observed experimental variations in B. anthracis. By use of heat on one hand and the constant transplanting of young cultures on the other, pure sporogenic and asporogenic races were obtained. From 5 to 20 transplantations of the latter on glycerine agar caused them to permanently lose their spore forming power.

This may suffice for the chemical variation. The morphological variation is less important. To quote Dobell: "Concerning structural variation in bacteria very little is known. This is not because structural differences between members of the same species are uncommon, but because the normal structure and life history of nearly every species is still largely a matter of conjecture. Many species are probably polymorphic, the various forms depending upon the particular stage that has been reached in the specific life cycle and partly upon external conditions. Many continue to multiply after reaching a degenerate form, the so-called 'involution forms.'" However, I shall present a few illustrations of this form of variation. Revis[7] has produced from B. coli, by the use of malachite green in the cultures, a new race which differs physiologically, morphologically, and culturally from the original. It gives a viscid colony which contains long filaments. It breeds true. Howlett[8] gives an account of the experiments of Mme. Victor Henri[9] with B. anthracis. These organisms when exposed to ultra-violet rays from 1 to 40 minutes were mostly killed. Cultures showed that of those that survived, characteristics decidedly different from the normal B. anthracis were displayed. They ranged from coccoid forms to thin filimentuous, Gram-negative, non-liquifying organisms, and produced lesions different from anthrax. The forms remained stable in cultures but reverted in cultures after passage through animals.

In illustration of the polymorphic character of bacteria may be cited Santamaria's experiment[10] with the leprosy bacillus. Four weeks after inoculating a white mouse with the bacillus he killed the animal and placed a small nodule from the spleen on glycerine agar. Smears from the spleen showed acid-fast bacilli at this time. The cultures after two weeks' incubation at 37° showed a whitish growth at the edge of the tissue. Transplants were made to Dorset's egg media where growth was more rapid. The growth consisted of branching filamentary organisms which were not resistant to acid. Later acid-fast granules appeared and fifteen days later the granules had increased in size. After fourteen months the cultures contained typical acid-fast bacilli, and the remaining branching filaments were also acid-fast.

Probably the most important work that has been published on transmutations among bacteria is that by Rosenow[11] as observed in the streptococcus-pneumococcus group. He has succeeded in converting the hemolytic streptococcus to Str. viridans, and the latter to a pneumococcus. A hemolytic strain which remained constant in its characters for nearly a year was converted to a Str. viridans by means of unfavorable cultural conditions. Other strains of the same were found to change rapidly in the character of their growth, showing all the characteristics of Str. viridans, when grown in symbiosis with B. subtilis. The colonies that grew near the bacillus changed while those farther from the latter colonies remained hemolytic. These converted strains of Str. viridans remained constant and produced typical lesions on the heart valves of animals into which they were injected, although, before transformation, they had a selective action on the joints of animals.

Having on previous occasions transformed Str. viridans into a pneumococcus by passage through animals, he now attempted to convert the Str. viridans produced from the hemolytic strain into a pneumococcus by similar methods. After passage through fourteen guinea pigs, the organisms was found to possess greatly increased virulence and to have a capsule. In fact it was now indistinguishable from the pneumococcus morphologically and in its cultural and fermentation reactions. During this time the original strain from which the two others had been produced had remained, by culture on blood agar, unaltered. The pneumococcus remained unaltered in subcultures for over six months.

Grown in an atmosphere of oxygen, hemolytic streptococci tend to lose their hemolytic powers, and pneumococci lose their capsule and virulence, acquiring a hemolytic power and losing the power to ferment inulin. A pneumococcus was changed to a hemolytic streptococcus by passing through guinea pig and sealing some of the heart's blood in a pipette which was kept in the dark at room temperature for over five years.

His summary shows many strains of each species were transformed to one or more forms. The identity of the species selected as well as the various stages of transformation was made by every known test. The morphology, presence of capsule, fermentative powers, solubility in bile and salt solution, Marmorek's test (behavior toward broth culture filtrates), immunity reactions (opsonin and agglutinin production) and in pathogenic powers. In another place he states: "I do not hesitate to say that, if a bacteriologist can differentiate a typical pneumococcus from a typical streptococcus, that it is possible to transform one into the other, and as we transform pneumococcus into streptococcus there are intermediate states and intermediate organisms."[12]

Variation in pathogenicity among species which appear to be identical is too common to dwell on. I wish to mention an example or two of induced pathogenicity in non-pathogenic organisms. Geisse[13] has shown that saprophytic staphylococcus may be made pathogenic by suitable cultural methods. Ordinary cultures are of no avail, in fact the tendency on these is for the organisms to become less active and virulent. Cultures in broth in collodion sacs introduced into the peritoneal cavity, however, confer virulence on previously non-pathogenic strains.

Embleton & Thiele[14] have produced septicemia in animals with such organisms as Hoffman bacillus, Sarcina lutea and Proteus zenkeri, by injecting them in a media of hypertonic saline and strong gelatin. The action of the media prevents the access and delays the action of the anti-bodies. These organisms are non-pathogenic even when introduced in large numbers from an ordinary culture. Their virulence may be increased after passage so as to produce septicemia without the use of the hypertonic media. In another group of bacteria they found that pathogenic properties were apparent only after the animal had been sensitized by previous injection of dead homologous organisms. The B. mycoides represents this class. Ordinarily this bacillus does not grow at body temperature. By slowly acclimatizing it to higher temperatures and injecting into a previously sensitized animal it produces a septicemia resembling anthrax. Its characters are also changed in that it loses its flagella and develops a capsule. In similar manner miliary tuberculosis was developed in guinea pigs and rabbits with the B. phlei. and smegma.

I have attempted in the foregoing to present evidence that bacteria are able to acquire new characteristics which they may subsequently lose under similar conditions. In other words, some species at least are not stable, but change their metabolic processes to meet their environment. If variation occurs under the influence of weak chemical solution, salt concentration, oxygen tension, and symbiosis with other organisms, it is reasonable to presume that similar changes may occur in the body in the course of infections where environment is also variable to the parasite. Such phenomena have been observed; *e.g.*, the streptococcus obtained in puerperal sepsis may differ from that obtained from a metastatic abscess from the same case. Also "cultures in pneumonia and otitis media suggest a transformation in vivo of Str. mucosus and of pneumococcus into hemolytic Str."[15]

The selective action which organisms display toward certain tissues of the body may be acquired within the body to a certain extent. If there are alterations in the constitution of the parasite depending upon the conditions existing at the point of infection, this fact may determine the nature the disease may assume as much as the parasite itself. Just what characteristics of bacteria control the affinities for various structures is not explained, but such affinities exist as a well marked phenomenon and bacteria undergoing experimental mutations show different affinities at different stages of their transformation.

Considering that bacteria are low protophytes in the reproduction of which there is not merely a continuity of germ-plasm, but of the somatic-plasm as well, that there is no sexual phase in which the union of two variants tend to check the effect of chance variation and bring the product back toward the average, and considering the rapidity of multiplication by which many generations are produced in a day, we should expect to find a prolific field for the study of the biological principles of variation, which in higher organisms is a slow process. The progeny of a bacterium which varies may constitute a new race in which every individual possesses the new characters, for the change in the genetic constitution of the parent will find expression in all its progeny because there is but one parent.

There is more variation to be found in some genera than in others. As a rule small genera with few forms, show more constancy than large ones. B. anthracis represents practically a genus in itself. On the other hand genera like the diphtheroids and colon group show a condition where it is difficult to say what are species and what are varieties. To quote from Andrewes[16] "We see before us in such genera as the streptococcus and colon groups a mass of variable forms representing a melting-pot in which species are made and are being made. . . . Thus from the colon group we see B. typhosus already emerged as a species fully fixed and defined, while in B. Samonella we have a sub-group of coliform organisms struggling upward into differentiation, separable as a sub-group, but with specific limits recognizable only by serology."

The classification of bacteria according to morphology and cultural characters is losing much of its practical value. So long as it was a matter of diagnosis little difficulty was found in the classification. The stained smear and the use of a few cultures were sufficient to place the organism in its proper species, or at least group, which was all that was required. When it comes to the application of immuno-therapy, classification takes on an entirely different aspect, for here we find our species subdivided according to serological reactions, which it is important to take into account when selecting an antigen for immunization. It is the result of these refined methods of study that has upset our ideas of classification and made it extremely difficult to define the term "species."

There are two factors in an infection. One is the parasite, the other the host. They are antagonistic and both capable of adapting themselves more or less to the attacking forces of the other. An organism to be pathogenic must be able to grow at the temperature of the body of the host, it must find suitable material for its own metabolism, and it must be able to call forth specific antibodies. According to Vaughn's idea of infection, which is also borne out by Abderhalden's work, the bacteria after gaining entrance, elaborate ferments which attack the protein of the body making it available for their use. As they multiply they become a foreign protein in the body and there is produced on the part of the host specific ferments which split their protein, *viz.*, the bacterial bodies. It is this "split protein" product which acts as a poison and gives rise to the symptoms of disease. From the observations of Embleton & Thiele already referred to, they place bacteria into three groups. In the first are those against which the body produces little anti-body, so that the bacteria are slowly acted upon and produce no poisons. By artificially increasing the anti-body production these bacteria become pathogenic. In the second group are those against which moderate quantities of anti-bodies are produced which act gradually upon the bacterial bodies, and the split protein not being immediately broken beyond the toxic stage accumulates in the system. These are the pathogenic forms. The third group consists of bacteria against which many anti-bodies are produced. In this case the protein bodies are so rapidly broken down that they soon become split beyond the toxic stage. These become pathogenic when the anti-body activity is reduced.

The virulence of an organism is a factor in an infection. Virulence is determined by the rate of liberation of toxic substances by the action of anti-bodies and its retention in the tissues. The non-pathogenic bacteria which are made pathogenic by the use of hypertonic salt solution to decrease the anti-body action, became sufficiently virulent after animal passage to produce septicemia without the aid of the media. This is explained by the fact that, by adaptation or selection, they had become more resistant to the action of the anti-bodies. A common observation among bacteria that increase their virulence is the production of a capsule which acts as a protection against anti-bodies. The increased virulence of bacteria by animal passage has been explained on the principle of survival of the fittest, in that the feeble members are soon destroyed by the host and the resulting infection is caused by the descendants of those which have been better able to resist destruction. Adaptation to environment also enters into this change as seen by the capsule production. We might say that the infection has resulted from the progeny of those that were best able to adapt themselves to the resisting forces of the host, and have emerged a more virulent strain.

The adaptation of parasitic microbes to adverse forces in the body of the host is a matter of considerable importance, especially in chronic infections and in those that tend to relapse. It applies to protozoan disease perhaps more markedly than to bacterial. To quote Flexner [17] "The resistant parasites are variants of the normal species produced artificially in the course of treatment by anti-body or by drugs. The variations induced may persist indefinitely and be transmissible. . . . Hence in considering the problem of the therapeutics of infection we must take into account the fact that the parasites possess an advantage of regulation within themselves to preserve them from extinction, through which they alter rapidly, not their form and external appearance so much as their chemical characters, when too closely pressed or menaced. And this change consists in the development of a state of resistance or 'fastness' to injurious chemical bodies, whether immunity principles of the blood or still other substances."

While emphasis has been placed in this paper upon the variability of bacteria, it is not to be understood that this applies to all species to the extent of upsetting our ideas of etiology. Variation is the rule under adverse or changed conditions. Many species are fixed; they have become fixed as parasites because of a prolonged period during which successive generations have led a parasitic life. There is no difficulty in defining such species as B. typhosus. Some work has been done in an attempt to run down definite fixed species with the idea of preparing immune sera for such cases as come within the species. Dochez & Avery [18] give a report of work done with the pneumococcus which confirms previous reports. Many strains of pneumococcus from cases of pneumonia have been examined, and classed according to immunological reactions. Four groups have been made. The majority of cases of pneumonia come in group I, a smaller number in group II. Group III consists of the mucosus strains, and IV of heterogenous strains which show no immunological relation to the other groups. Nearly 80 per cent of cases of pneumonia are shown to be due to a pneumococcus which can be placed in one of three groups. The remaining 20 per cent show an organism which cannot be placed in any of the three groups.

It would appear at first that their findings are at variance with some of the work cited in this paper, especially as they state that they have never observed a transmutation from one strain of streptococcus or pneumococcus to another after working for years with many strains on various media. Their work has not been to study variation but to arrange into sub-species the fixed types of pneumococci which have become essentially parasitic and which they find accountable for 80 per cent of the pneumonias. We still have left 20 per cent of our pneumonias due to the fluctuating pneumococci which have not been parasitic sufficiently long to be habitually so or to acquire those characters that might place them in a constant group. A good percentage of infectious diseases are fairly typical; it is the atypical minority of these cases which appear to have the same etiology, that are difficult to understand at times. They are apparently due to that labile group in which variation easily occurs when the environment is altered.

These facts have a practical bearing upon immuno-therapy, and without further detail I shall summarize what seems to be the logical course in view of our present knowledge. The principle of immuno-therapy is to augment the defenses of the body by supplying anti-bodies, either already formed as in sera, or stimulating their production by the use of suitable antigens.

In vaccine therapy the use of organisms answering all the characteristics of the infecting germ may give satisfactory results in a certain number of typical infections. The use of stock vaccines may be justifiable when it can be shown that the infecting organism is of a definite fixed species giving rise to a typical lesion. The staphylococcus aureus isolated from a carbuncle may serve as well for treatment of a second case as it was for the case from which it was isolated, but it would not be advisable to use it in a staphylococcic infection of some different nature. The use of the so-called polyvalent stock vaccines is based upon no justifiable nor reasonable ground. Autogenous vaccines are the acknowledged rational agent to use when this branch of immuno-therapy is indicated.

It would seem that there should be more uniformity in results obtained from the use of vaccines. Perhaps a modification of the usual technique of preparation is necessary to better results. In the first place one must be sure of selecting the proper organism, that which is responsible for the infection, which may present some difficulty in the more or less chronic cases where other bacteria are present. It should represent the organism in its most active form. For this reason cultures from diseased tissue are preferable to those from discharges, and cultures from an active process better than from an old subsiding lesion. The cultivation should be made upon media corresponding as nearly as possible to that existing in the source from which the bacteria were obtained, and no more subcultures made on any media than are actually required to produce a sufficient growth in pure culture for the preparation of an antigen.

The necessity of this care is essential. Penfold has found that vaccination with a strain of plague bacillus grown on agar will protect rats against itself, but will not protect against the same strain grown on serum.[19] Just what energy is exhausted in the production of anti-body is not known, but it seems useless to attempt the production of a variety of anti-bodies by the use of polyvalent antigens in the hope that some one may be beneficial in a given infection. It has been shown that simultaneous injection of two antigens will not produce as strong immunity reactions in the blood as they will if injected alone in the same quantity. Further we cannot be sure that we are not inviting trouble when we induce an anti-body production against an organism that is not an active infecting agent at the time. We may be sensitizing the body to an organism which it is previously able to resist. There is yet too much that we do not know to allow us to go beyond a rational application of our present knowledge. The processes of infection and immunity are so closely related with changed activity or allergy on the part of the host, that it is not advisable to sensitize too freely until we have a better understanding of the latter.

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1. *Jour. Med. Research*, xxiv, 265.
2. *Jour. Med. Research*, 1912, xxiv, 513.
3. *Penfold.*
4. *Jour. Genetics*, 1913, p. 325
5. *Arch. f. Hyg.*, lxl, 250.
6. *Proc. Roy. Soc. B.*, lxxlx, 329.
7. *Proc. Roy. Soc. B.*, lxxxv, 192.
8. *Nature*, Apr. 23, 1914.
9. *Compt. Rend. Acad. Sci.*, clviii, 14.
10. *Jour. Trop. Mrd. & Hyg.*, Oct. 1, 1913, p. 301.
11. *Jour. Inf. Dis., Jan.*, 1914.
12. *J. A. M. A.*, lxi, 2007.
13. *Zeitschr. f. Hyg.*, Vol. 77, p. 482.
14. *Brit. Med. Jour.*, Feb. 1, 1913, p. 224.
15. *Rosenow.*
16. *Lancet*, Nov. 1, 1913, p. 1239.
17. *Jour. A. M. A.*, lxi, 7, p. 448.
18. *Jour. Exp. Med.*, xxi, 2, p. 114.
19. *Brit. Med. Jour.*, Oct. 24, 1914, p. 710.

# RELATIONSHIP BETWEEN REPEATED ANAPHYLACTIC INTOXICATION AND CHRONIC INFLAMMATORY LESIONS OF KIDNEY (WITH LANTERN SLIDE DEMONSTRATION).*

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THE studies which I want to describe to you are the results of some attempts to determine whether the severe symptoms and the effects which are produced in anaphylactic shock, if repeated in animals, may not cause permanent changes in the organs of these animals. The work was suggested through the study of certain cases of subacute nephritis.

As you are aware, there are occasional cases of nephritis that are associated with such skin lesions as erythema multiforme, and a few that resemble in many ways serum disease in the human being. These are characterized by repeated attacks of generalized edema, accompanied with fever associated with urticaria, with eosinophilia and albuminuria and cylindruria.

A great deal of attention has been paid to the symptomatology of anaphylactic shock in animals, and the acute lesions which result have been studied to a certain extent, but the animals die so rapidly that very little has been noted on pathological examination of the organs.

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* Read before the Brooklyn Pathological Society, February 11, 1915.

Gay and Southard first pointed out that there are areas of fatty degeneration in the heart muscles, that the endothelium of the bloodvessels showed fat droplets and that hemorrhages occurred in the mucous membrane of the stomach, and intestines and in the peritoneum.

It has been known, too, for a long time that if a rabbit was repeatedly inoculated subcutaneously with horse serum, there will develop, after the third or fourth inoculation, an area of edema which goes on occasionally to necrosis and to an inflammatory reaction. This is known as the Arthus' phenomenon, and is perhaps the first observation upon the local effect of repeated parenteral injections of foreign protein in animals.

Somewhat later Friedberger studied the effects of spraying horse serum into the trachea of guinea pigs that had been sensitized to this serum and found that there resulted a type of pneumonia which was characterized by an exudate of eosiniphilic cells, a few polymorphonuclear cells and round cells in the alveoli of the lungs. Later Ischioka repeated these experiments and confirmed them and finally Schlecht and Schwenke studied in various ways the effects of local injections of foreign proteins into animals. They have studied the anaphylactic pneumonia of Friedberger, the Arthus phenomenon, the reaction which takes place in the peritoneum of the guinea pig after the second injection of serum, and the so-called anaphylactic enteritis originally described by Richet, which occurs in dogs subjected to a second injection of horse serum. In all these situations they have recorded the appearance of an acute or subacute inflammatory reaction associated with edema and with an exudate of cells into the tissues about; so that there is some evidence to show that in sensitized animals the injections of the same foreign protein to which these animals have been sensitized results, at least in certain situations, in a temporary inflammatory process.

The work as I carried it out, was done upon a long series of animals. I have used guinea pigs, rabbits, cats and dogs. In these various animals the effects of the second injection (the intoxicating injection) of protein is somewhat different. I need hardly describe to you in detail the results of the acute anaphylactic shock, but just a word about the technic of the experiment:

These animals receive a single injection of egg albumen or of horse serum and then after a period of three weeks the secondary and intoxicating doses were administered at weekly or ten-day intervals. These second injections were made, as a rule, intravenously, although in guinea pigs the second injections were necessarily made into the peritonum. In a few cases the second injections were made subcutaneously.

The acute effects of anaphylaxis in guinea pigs are, no doubt, familiar to all of you. If a guinea pig which has been previously sensitized, is injected intravenously at the end of three weeks with very small quantity of serum, that animal in a few minutes begins to appear sick, coughs, shows serious respiratory distress, exhibits bucking movements, convulsions, paralysis of the hind legs, while respirations become slower and more and more forced, the whole thorax is drawn in, the animal gasps for breath, is unconscious and finally dies. In dogs the effect is quite different. After a period of five minutes following an intravenous injection, the dog begins to gap, then lies down, seems very tired, drops his head between his legs, but is perfectly conscious. During this period there is a violent contraction of the abdomen and constant and repeated defecation and often the movements are bloody. There is vomiting and there is involuntary urination. There is no disturbance in respiration and very little disturbance in the heart rate, the blood pressure rapidly falls and finally the animal goes into complete collapse and dies. Cats have a convulsion immediately, after which they are paralyzed for fifteen or twenty minutes but may recover entirely. In rabbits the effect is again different. There, too, there is very slight disturbance of respiration, although some animals show a certain degree of dyspnoea. In the collapse which always follows a fatal injection they lie down with their bellies against the floor. There is a very rapid pulse rate and there are involuntary and repeated defecations and urinations.

Such attacks, though rarely as severe as I have described, were repeated in most animals five, six or eight times and occasionally as many as ten and fourteen times. In order to do this very small quantities of foreign protein were given for these intoxicating doses and mild symptoms were produced. By this means it is possible to repeat the symptoms over and over again at periods of ten days to two weeks.

After animals had been intoxicated on six or eight separate occasions, they were killed and the organs examined. In most of these animals, very definite changes were found in certain of the organs.

These changes occur in the heart muscle, in the liver and in the kidneys of about 80 per cent of the rabbits which were examined, in the kidneys of all of the guinea pigs that were examined, and in about 50 per cent of the dogs and cats. In many instances these changes were only microscopical and I shall show you some slides in a moment to illustrate the lesions.

In some, however, one could observe changes in the gross condition of the organ. In the animals that received the greatest number of doses, the liver was occasionally streaked with white lines and showed irregular scars and depressions. In certain of the kidneys (particularly in the rabbits) there were well-marked changes. In the earliest cases one saw white streaks or white dots with some irregularity in the striae of the cortex and some irregularity of the surface of the kidney. In the most advanced cases (and I have a moderately advanced one here) the kidney is much smaller than it should be. It is brownish in color, the surface is finely granular, and on section the cortex is greatly narrowed. The striae are almost entirely obscured and the definition between the cortex and medulla is largely obliterated.

The early microscopic changes in the kidney consist in a focal degeneration of the epithelium of the convoluted tubules and cortex and of the loops of Henle and collecting tubules in the mid portion and medulla. Surrounding these foci there is an infiltration of small round cells which evidently arrive at these situations by way of the blood vessels. Such areas may be very numerous and may extend over a large area so that much of the cortex and mid-zone is involved in an acute interstitial nephritis. At the same time the glomeruli may show an increase of cells in the capillary tufts with fragmentation of the nuclei of the large cells. In the more advanced stages the process gives place to a type of chronic inflammation with new formation of connective tissue between tubules that are atrophied or that may be dilated. Glomeruli in these regions show thickening of the capillaries, proliferation of the capsular epithelium and conversion of the capillary tuft into a cellular fibrous mass. Thus in the latest stages the kidney assumes the appearance of a chronic nephritis with patchy increase of cellular connective tissue and fibrosis of glomeruli. Between these patches the tubular epithelium and the interstitial tissue is apparently normal.

It was necessary, of course, to determine whether these effects were produced by an inherent toxic action of egg white and horse serum or whether they depended entirely upon the repeated inoculation of the same foreign protein and were thus a result of the anaphylactic intoxication to which these animals were subjected.

To determine this point we have studied a series of animals that have been injected repeatedly with horse serum as compared with a group of animals that have had one large injection of horse serum. These animals have been kept for several months and then killed, and it was found as a matter of fact that in a small proportion of the animals that have had only a single injection, changes occur in the heart muscles and occasionally in the kidney. They are not very extensive but are quite similar to the changes which I have shown. Thus in a series of 22 rabbits that had a single large injection of horse serum, 25 per cent, or one-quarter of the number, showed slight changes in the heart muscles. In a series of 33 rabbits that were injected repeatedly with horse serum 81.8 per cent (practically 82 per cent) of the animals showed very extensive lesions such as I have described. Consequently it became evident that occasionally a single injection of horse serum might bring about slight changes in the heart muscle and in the kidney. In order to study this still further we determined the time at which these changes might develop. If we were dealing with toxic substances it would be expected that the change would occur quite early. The fact was brought out that changes do not occur in rabbits for three or four weeks after the injection has been made, which corresponds roughly to the time at which these intracutaneous inoculations of foreign serum in patients suffering from protein in human beings and we have attempted to do this by making animals become sensitive or in an anaphylactic state. The lesions develop, therefore, after the period in which serum disease manifests itself in man and are probably an expression of similar changes in the animal.

In order to use these experiments in clinical medicine, it is necessary to devise some method of studying the sensitiveness to foreign various types of disease.

The technic is quite simple. One uses a syringe with which it is possible to measure very small quantities of fluid. With a fine needle the injection is made intracutaneously when as small a quantity as 0.02 c.c. may be measured accurately. In this way we have found a great number of individuals sensitive to foreign proteins.

. The results, however, of these studies and relationship of anaphylaxis to the reaction in certain chronic bacterial infections are not sufficiently advanced for me to dwell upon them.

To recapitulate, then, I may say that repeated inoculations of small amounts of foreign proteins in animals sensitized to these proteins brings about more or less extensive focalized lesions in various parenchymatous organs.

The single injection of a large amount of foreign protein in a normal animal may occasionally result in similar lesions. These, however, do not appear until the third week after inoculation and probably do not make their appearance until the time that the skin sensitization develops. They are, therefore, a part of the anaphylactic phenomena.

The focalized inflammatory reactions are to be considered as a result, I think, of anaphylactic intoxication and are not due to any primary toxicity of the foreign protein.

# PREVENTIVE ORTHOPEDICS IN INFANCY AND CHILDHOOD.*

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THE usual definition given for Orthopedic Surgery is: The science which treats of the Prevention and Cure of Deformity. Fifty years ago Potts Disease was practically a synonym of hunch back. Ten years ago it meant deformed back, while at the present day it still means the same unfortunately in the average hospital case which comes late for treatment, but in private practice it means usually long treatment but ultimately a spine without deformity. The same is true in most orthopedic conditions. Early attention counts so much toward the elimination of malpositions and disabilities.

Congenital deformities may not be prevented, but an exaggeration of them and subsequent disability can be. Club foot, one of the commonest of these—includes besides the typical neglected case also the foot showing a moderate lack of balance between the muscle groups. One of the cardinal principles of orthopedics is that overstretched muscles lose their tone and are weakened. An infant's foot compressed for months with the dorsum against the anterior surface of the leg presents an overstretched tendo achillis and much weakened calf muscle which will not properly recover its tone without being held for a sufficient length of time in the overcorrected position. This may be a pure calcaneus but there is generally associated with it a valgus. This might easily account for many of the flattened arches seen in young children more frequently than is often supposed. The same principles pertain in the other malplacements of the foot as the usual form of equino varus. But in the marked club foot, it is believed that there is some fault in development, not merely pressure.

Early treatment with plaster to attain quickly the overcorrected position in order to relax the overstretched muscles and ligaments is most important in order that the effects of growth may readjust the faulty relations—the stretched muscles being too weak and the opposing contracted ones too strong. The older method of delaying, and then correcting with the knife did not take this into account, the vicious relation of muscle groups becoming increased; and a relapse resulted or a longer after-treatment necessitated. Nor is it well to postpone treatment a few months as valuable time is lost. It may be begun the first day. The mere correction of deformity is not sufficient; but a restoration of balance between muscle groups and ligaments is essential to success. Long after-treatment and attention is always required. The mere surgeon strives to "send the patient home on the ninth day." The majority of these deformities may be cured without operation, the parents, however, being apprised that the tendo achillis may resist and require tenotomy later.

In the after care the importance of daily muscle development of the stretched and weakened group is explained to the parent while the brace retains the overcorrected position. The disadvantage of the brace as used by some in the early correction is the kicking it off by night, and the careless attention of the mother by day. The neglected or relapsed case requires an operation or two or three operations. And many do relapse because of discontinuance of treatment before a proper balance of muscle is attained.

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* Read before the Pediatric Society of Brooklyn, April 28, 1915.

Congenital dislocation of the hip may not be easily detected at birth—the head of the femur may be on the rim of the acetabulum—not completely out. When diagnosed, the parents should be made to understand that it is a fault of development and not an accident of birth. Although early replacement would be theoretically correct, the head would not remain in the acetabulum without retention by plaster, on account of the laxity of the capsule and ligaments. And plaster in early infancy is almost impossible because of being quickly softened by urine. It is customary to wait until the fifteenth or eighteenth month. At that time too, the functional use of the joint in weight bearing while walking, tends to development of head and acetabulum and thus aids in cure. The malformation of the ball and socket and their development into the normal must be taken into consideration.

The placing of the thigh at right angles to the body is necessary to prevent redisplacement and the long holding and gradual reduction of the angle will aid in this prevention. Too great haste only endangers the result.

A case of double dislocation operated by the writer demonstrates the advantage of long retention. The acetabula appeared to be nearly flat from the X-ray and from the fact that, at the time of reduction, the heads slipped out when the thighs were brought down only ten degrees below the right angle position. The first plaster was maintained for ten months and the succeeding plasters applied with the angle reduced about ten or fifteen degrees each time—plaster being kept on for sixteen months. A perfect anatomical cure, however, well repaid the parents and child. Treatment of this condition is long and trying to the parents, but not as long as the lifelong limp and disability to the untreated child. A year is the usual time for continuing the plaster.

The remark of the doctor to Prof. Lorenz that he made a child who walked like a duck, walk like a lame duck is very true, but the writer has seen a seventy-year-old lady with untreated hip dislocation walk worse than the aforementioned lame duck.

The child with his congenital defect runs around happy and care free, but in adult life must perforce content himself with four or five inches of shortening, marked limp and disability and frequent tire of overstrained ligaments. The adult of today knows that orthopedics in his childhood was not sufficiently advanced to prevent, but the dislocated adult of the future will know otherwise. These remarks may seem unnecessary, but are not, as some family physicians even in the past few years have advised parents to "leave well enough alone."

Congenital displacements of other joints are very rare and require correction on the same principles. Congenital absence of such bones as the radius and fibula are also very rare. Formerly untreated though resulting in severe deformities, they are now being replaced by the bone graft.

Prevention of the disease Rachitis is too well known to be touched upon, but the resulting deformities too frequently receive the expectant treatment rather than the preventive. The softened bones of the legs—and arms as well—should be relieved of weight bearing—or the bow leg or knock knee result—also in creeping, the radius and ulna may become bowed. The child should not always be carried on the same arm of the mother or curves in the legs or spine may easily result. The sitting child requires proper placing. The seat of the chair rarely fits—the child either sitting forward with legs hanging properly but back unsupported and rounded or sitting back with spine protected but half of the legs projecting so that the weight of the foot produces the ugly anterior bowing. This latter curve may be produced by the crossed leg habit. The infant normally has some outward bowing of the tibia and this may be exaggerated, probably without the presence of rachitis. It may sound too idealistic, but probably true, that there should be no bow legs or knock-knee; but at least operation should rarely be required. A baby should never be urged to walk, but rather held back—never before the 12th month. When deformity may not be prevented, early treatment will eliminate the need of surgery. In the mild case manipulation twice or three times a day—short of causing pain—will usually straighten a bone provided there is no weight bearing. The mother may easily be shown how to hold the leg and apply the force, care being taken not to throw strain on ligaments of the neighboring joints. When the curve is beyond a mild degree a simple brace which continues the correcting force should be applied. This should always be used at the active age when the child cannot be kept off its feet. In what might be termed tibia vara the short brace will be efficient, but in the marked genu varum a higher hold and force is required. The brace plus daily manipulation may be expected to cure up to three or three and one-half years. After the bones are hard, this treatment is a waste of time, and operation must be resorted to. In the rare cases of adult rickets occurring at adolescence the bones are softened and braces might straighten, but operation is easier for the patient at this age. The flat foot frequently complicating genu varum and valgum is not to be neglected. Anterior bow legs practically always require operation—a brace being of no use.

Genu valgum, the opposite deformity, merely receives the applied force in the opposite direction. In the slight degree daily manipulation together with raising the inner border of the shoe one-fourth of an inch may be all that is necessary. In these allied deformities it is to be borne in mind that an osteotomy or osteoclasis merely makes two curves of one, producing an apparent straight line, while the brace gradually eliminates the curve. But in both methods the aid of Wolf's law is invoked to remodel the architecture of the bone. That the manipulation is a real factor in the cure was strongly demonstrated to the writer in a case where under ether the tibia was easily moulded into shape without apparent solution of continuity. It cannot be too strongly stated that the bow-leg treated early will not come to the brace, much less the operation.

Rachitic round back is caused by too much unsupported sitting when muscles, ligaments and bones are weakened by rachitis. Diet and medication will cure the disease but will not prevent abnormal curves in spines any more than in legs. Rachitic curves must be expected and anticipated but the expected should not happen. The recumbent spine does not curve nor does the sitting spine when properly supported. The rachitic scoliosis is caused by the child lying always on one side or always held on one arm. The child in bed wishes to see something besides the wall, therefore frequently turn the bed—or the child. A low pillow or none at all secures a better position.

The allied condition of Scorbutus is still too frequently mistaken for rheumatism or joint disease although a differential diagnosis is so quickly made by change of diet and orange juice. The infant of a year rarely has tuberculosis of a joint or rheumatism while scurvy is comparatively common. But a joint or epiphysis when really distended from the hemorrhage requires protection to prevent a possible displacement.

Lateral curvature of spine, when not caused by a congenital asymmetry of a vertebra, may often be prevented by careful attention to the causes which produce it. Prof. Jarvis Wight used to claim that one person in four had some difference in the length of legs. In the experience of the writer that proportion is much exaggerated, but in a fair number of curvatures a difference will be found. A girl of ten was brought to the Hospital for Ruptured and Crippled who had one leg a quarter of an inch shorter. The mother said she had a difference beginning at the same age. On examination she showed an inch difference and a curvature of the spine. She asserted that her mother also had a short leg and curvature. Measurements made from anterior spines of the ilium to the malleoli might well be a routine procedure in an examination of a child for any cause. The simple elevating of one heel the required difference, levels up the pelvis and places the spine straight. Thus may be avoided simply, a scoliosis which is difficult of correction. Much has been done of recent years in changing the faulty school desks and incorrect postures; this together with the gymnasium work and folk dancing required of the girl has undoubtedly reduced the number of scoliotic cases seen, for unquestionably the actively exercising boy is much less liable to this than his sister. The family physician should, when opportunity offers, watch for the one-sided habits of standing, sitting and lying at home, and the carrying of the usual truck load of books always on the same arm. Considerable advance has been made in the correction of scoliosis, but the prevention is still far easier than the cure. The curvature once started, active treatment alone will correct—not general gymnasium work or merely turning the child out of doors as is sometimes directed.

Flat foot or weak foot, so often considered an affection of the adult alone, probably begins as often in childhood. The child with this unfortunately has as a rule little or no pain, and as the average parent does not know what the normal position of the foot should be when the child turns its toes out and rolls its ankles in the change is not noticed. Mothers may often ask advice for pigeon toes, but rarely for duck toes. The adult weak foot practically always turns out; in the child however they often turn in. Intoeing is a symptom of either weak foot or knock knee. This position is assumed from an unconscious effort to take the weight off the weak arch. Treatment is directed to the arch and not the position of foot, but raising the inner border of the shoe a quarter of an inch, thus aiding in restoring the balance, will be seen to correct also either the in or out toeing. A patient of the writer's directed to procure Best's shoe raised on the inner border, was told that there must be a mistake as they raised the outer border for pigeon toe. Here, too, applies the principle of the stretched and weakened muscles. And the adductors of the foot may be exercised even in the infant by tickling the sole. In older children the proper balance of the foot may be taught which brings the quickest results in weak foot. Plates are often required, and are best made from a cast of the foot. But the plate is merely an aid, dependence being placed more on correcting the balance, and muscle exercise. The shoe should of course be the shape of the normal foot, straight on the inner border. The shoemaker says his shoe will cure flat feet, the instrument maker claims the same for his plate. The shoe and plate together hardly count for more than one-quarter of the treatment. Three-quarters depends upon the practice of a correct balance of the foot and exercise of the adductors and plantar flexors. Strapping with the foot in varus is often of great aid in teaching the new position.

The medical advisor may, if he wishes, send his flat feet to the maker of shoes and instruments, but he is not fair to his patient if he does so without directing the most important aids to a cure. The correct shoes and plates may be worn forever without attaining the desired result if he continues holding the foot in the abnormal position. And mechanical support tends to weaken muscles unless these be exercised.

If the Chinese custom prevailed of remunerating the physician for keeping the family well, more could be accomplished than now; the growing child would be thoroughly examined at regular intervals. Until such time the medical profession must practice watchful waiting as best it may without being accused of butting in.

## PREVENTION OF DEFORMITIES IN POLIOMYELITIS.*

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THERE is no need to tell an audience of medical practitioners that infantile paralysis tends toward severe and disabling deformities; there is much need to give some thought to the mechanism of the deformity formation, in order to understand its prevention, its amelioration and even its practical cure. That essentially all paralytic deformities may be prevented, that the disabilities may be greatly ameliorated and that deformities (when they have occurred) may be largely corrected and disabilities practically compensated for, is the belief and practice of orthopedic surgeons today. Let us clearly differentiate between the use of the words, "disability" and "deformity," and limit ourselves briefly to the discussion of the prevention of deformity, which is the scope of this symposium.

The phenomena and stages of an attack of anterior poliomyelitis are: (1) Sudden onset, with high fever and other symptoms, familiar to the clinician; (2) More or less general paralysis—general inability to move a considerable part of the motor apparatus; (3) Stage of recovery of a greater part of this motor apparatus; but with increasing evidence that a certain well-defined field—that certain "joint controls,"

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* Symposium presented at The Brooklyn Pediatric Society, April 28, 1915.

as the writer often expresses it—is to be greatly retarded in recovery or is not to recover; and (4) The stage of so-called "residual paralysis." The first stage—that of acute symptoms—averages two or three days' duration; the second stage—that of general paralysis—about two weeks; the third stage—that of recovery of the greater part of the motor apparatus—lasts three to six months, and the last stage—that of residual paralysis—lasts until the properly informed individual is called upon to relieve it or to mitigate it. Until the beginning of recovery of the greater area of paralysis there is but little tendency to deformity and, except to keep the patient as free from muscle strains as possible, but little occasion to prevent deformity. But with the return of power begins the *unbalance of muscle pulls* on various joints. The stronger muscles contract and pull the moving segment, as a leg or a foot, toward themselves. This mechanically does two things: (1) The stronger muscles, unopposed, get into a state of permanent shortening, with *deformity* of the moved part (the foot, the leg or other member); and (2) the weaker muscles are strained, stretched, permanently lengthened and their *recovery thereby retarded.* That, in brief, is the mechanism of the production of paralytic deformity—unequal muscle pull, shortening of stronger muscles, carrying a bony segment permanently with it, and stretching and further weakening of the feebler muscles. Of course, the force of gravity directly applied, the faulty bearing of body weight on the weak lower extremity, and (it is added with censure) the endeavor of the brace-maker and the shoe-maker to fit and thus to accentuate the deformity, are factors added to this principle of unbalance of muscle pull and modify the character of the deformity.

The means employed to prevent deformity vary with the part of the body involved, and often require much study and not a little ingenuity to carry them out; but certain principles may be suggested. While the patient is in bed, see that the limbs, in particular, are kept in such a position that opposing muscle forces are habitually in their neutral position—that no shortenings occur. For instance, the patient lying on the back, the simple weight of a foot or this weight plus that of bed clothes (the latter often tightly drawn down) tends to give the foot habitual plantar flexion. When such a patient finally sits up he will be found to have the foot-drop deformity, with the tendo-achillis contraction. Also a pillow placed under the knees leads to contraction of the hamstring muscles, with consequent weakness of the extensors in front of the thighs—those muscles so important for later erect standing. Again, when the patient sits up in bed or is placed in a chair, there are long days in which the thighs are flexed upon the trunk and there results the contraction of the hip flexors—a deformity difficult to overcome. The scoliosis deformities are rather too complicated to more than mention at this time.

To guard against the insidious onset of any of these deformities, after acute symptoms have subsided, daily manipulation is to be undertaken by the nurse and not infrequently by the medical attendant. For the foot-drop deformity, a Volkmann foot and leg splint or the posterior half of a plaster of paris splint may be kept in most of the time. In the presence of contracting tendencies back of the knees, the plaster of paris rear splint should be carried well up the thighs. The danger of contraction of the hip flexors entails keeping the patient on his back longer than would otherwise seem warrantable. Sometimes the frank use of plaster of paris hip spica for a few weeks will allow these children to get up earlier. Do not have the fear, that is so often found among practitioners, of the *temporary* use of complete plaster of paris dressings. The judicious alternation between plaster of paris fixation, on the one hand, and removable braces with massage and passive motions (*not* electricity), on the other, is very helpful, in the regeneration of partially paralyzed muscles, and is often necessary in the prevention of deformity.

The nursing back of these weakened joint controls and the final efficient compensation of the disabling conditions is a chapter in itself; but prevention of deformity and care tending toward final practical efficiency are so interwoven, in the consideration of infantile paralysis, as to be inseparable.

In this discussion, more emphasis is placed upon the distinction between disability and deformity and upon the principles involved in deformity formation than upon specific methods in use, because it is firmly believed by the writer that deformities are caused more through a lack of understanding of these principles than lack of ingenuity to apply the proper remedy or willingness to refer these cases to the trained specialists. We orthopedic surgeons see a large proportion of these cases after deformity has occurred and it is sometimes difficult to explain to the parents that deformity correction must be first accomplished, before the upbuilding process—whether by bracing, massage and gymnastics, or by operation or by both—may be undertaken. It should be added that a certain percentage of the operations which we do could be avoided if, by prevention of deformity, that forgotten principle of recovery—the prevention of stretching, strain and *lengthening* of the weaker muscle groups—had been early and continuously looked to.

I add my plea for these sufferers from infantile paralysis. There is much more recovery of muscle power than is usually thought; such recovery is hindered by neglect and hastened by intelligent conservation of natural resources; and finally when all apparent recovery has taken place and "residual" paralysis remains, much compensation for its resulting disability may be attained by the judicious use of bracing, by carefully thought out and executed plastic operations or by both and by exercise.

## OPERATIVE TREATMENT OF CICATRICIAL TRACHOMA IN THE PRESENCE OF ITS COMMON COMPLICATIONS.*

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FEW diseases affecting the eye combine the elements of suffering and impaired vision for the individual, and danger to the community, quite so thoroughly as the one we will consider this evening. Though it is not the province of this paper to discuss trachoma and its treatment, in more than one or two of its manifestations, I am going to ask your indulgence while referring briefly to some of its salient characteristics.

Trachoma is an inflammation of the conjunctiva; infectious in its nature, and characterized by the presence of follicles or granulations. Typical cases may be regarded as presenting four stages:

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* Read at the Brooklyn Medical Society, April 16, 1915.

1st. The sago grain stage; showing some roughness at each extremity of the tarsus and in the superior cul-de-sac, forming nonvascular areas resembling sago grains.

2nd. The stage of papillary hypertrophy, in which there is frequently a more or less infectious discharge. Gelatinous granulations stud the fornices and tarsi, or merge into a general infiltration. The tarsi become thickened.

3rd. The stage of commencing cicatrization. Fine white lines are seen surrounding areas of inflamed conjunctiva, or encircling the granulations. Cicatrization in this manner is pathognomonic of trachoma.

4th. The stage of complete cicatrization, or so-called cured trachoma. The conjunctiva is pale, the granulations have disappeared, the retro-tarsal fold is obliterated, and the attenuated conjunctiva is furrowed with white lines of connective tissue. The Meibomian and acinous glands of the tarsus are destroyed, and considerable atrophy of the cartilage occurs, which is replaced by connective, or rarely by fatty, tissue.

It is in the last two stages, the cicatricial ones, that complications most frequently develop. Pannus makes its appearance, and corneal ulcers occur, often proving disastrous to the eye from the standpoint of its visual function. It is with these stages of trachoma and with the presence of these sequelae that this paper has to deal.

Trachomatous pannus may be described as a new growth, gelatinous and vascular, appearing at the upper limbus and extending downward, in severe cases involving the entire cornea. It usually burrows between the superficial epithelium and Bowman's membrane, but occasionally works its way beneath Bowman's membrane. The normal cornea is not vascular, and the presence of vessels in it is always indicative of some pathological process.

A cornea affected with pannus is particularly liable to develop ulcers, which add to the gravity of the condition and make the prognosis bad, as far as the restoration of visual acuity is concerned, in direct proportion to the proximity of these ulcers to the pupillary area. The prognosis depends also on the location of the pannus, those cases where it extends between the superficial epithelium and Bowman's membrane permitting a good prognosis, because the substance of the cornea is not destroyed. When it exists below Bowman's membrane the results are not so good, because of the infiltration of corneal structure. In the former cases the cornea regains its normal transparency, but in the latter, some opacity is permanent.

The condition of a person affected with trachoma, complicated with pannus, and corneal ulcers is deplorable. A kind of mechanical ptosis develops, because of the weight of the lids, spasm of the orbicularis and paralysis of the smooth fibers of Müller's muscle. Photophobia and blepharospasm are common accompaniments.

In mild cases the ordinary treatment, astringents, expression, grattage, etc., clears up the condition, but it is prone to return. The severer types are the bane of every ophthalmological clinic, and return at intervals year after year for treatment, and the vision gets progressively worse. The patients are unable to pursue their ordinary avocations, and become a drain on organized or private charity.

Can anything be done to ameliorate the suffering of these people, and restore to them their places as producers in the community?

The experience of such men as Heisrath and Kuhnt of Germany, Casey Wood, Brawley and Beard of Chicago and Wooten of New York, supplemented by the experience gained in my own series of operations leads me to believe that much may be done.

In 1822, Benedict, realizing the inadequacy of the accepted treatment for this condition, advocated the removal of the upper conjunctival fold. In 1874, Galezowski revived Benedict's operation. This operation was correct as far as it went, but it took no account of the disease affecting the tarsus, and soon fell into disuse. In 1882, Heisrath, of Koenigsberg, exercised some trachomatous tarsi and sent them to Professor Jacobson for histological examination. Two practical results followed: 1st, Jacobson found that trachoma affected not only the conjunctiva and subconjunctival tissues but extended deeply into the tarsus and 2nd, Heisrath, much to his surprise cured his cases. Twelve or fourteen years later Herman Kuhnt also working in Koenigsberg, East Prussia, where trachoma constitutes an almost national menace, improved the Heisrath technic.

These operations achieved considerable success in Germany, but strange to say many years elapsed before much attention was paid to them in this country, and then only by a few men some of whose names I have mentioned.

The operations for the cure of this condition are mainly two, the combined excision of Heisrath, and the tarsal resection of Kuhnt.

The combined operation is applicable, according to Beard;

1st. To all chronic forms of trachoma with characteristic follicles associated with infiltration of the tarsus, whether the cornea is involved or not.

2nd. In trachoma of the fornices and palpebral conjunctiva, independent of the condition of the tarsus, if the cornea is involved, or is about to be.

3rd. In gelatinous trachoma, if the convex edge of the tarsus shows typical thickening.

4th. In cured trachoma of the fornices if there is a secondary affection of the cornea.

The combined excision is performed as follows: preferably general anaesthesia. The lid is everted doubly, and an incision is made from one canthus to the other, separating the diseased from the healthy tissue, and extending through the conjunctiva only, care being taken to avoid wounding Müllers muscle which lies immediately beneath. The distal edge of the incision is undermined with blunt pointed scissors, for about four mm. and one needle of each of three double armed silk sutures, inserted. Care must be taken to include not more than one mm. of conjunctiva in the bight of the needle, otherwise troublesome synechiae may result. The sutures are now laid on a sterile towel across the cheek, without tying. The lid is next everted once, grasped with an Ehrhardt lid clamp, and an incision made from near one canthus to the other, two and one-half mm. from, and parallel to the lid border. This incision includes both conjunctiva and tarsus. The ends of both incisions are united by slight snips of the scissors. The tarsus is elevated and dissected from the adjacent structures, avoiding Müllers muscle and the orbicularis.

The lid is closed and the sutures, commencing with the central one, carefully approximated. The proximal needle of the central suture is pushed through the lid close up to the shelf of cartilage. The distal needle is forced through the cartilage and skin, and the ends are tied over a small roll of gauze. The other sutures are treated in a similar way. Beard makes this incision on a bevel and brings the sutures through the intermarginal space.

The eyes are bathed three times daily with a boric acid wash, and the sutures removed on the fifth day. Very little reaction occurs, and I have never seen an infection.

The tarsal resection of Kuhnt is performed only in cases of complete cicatrization of the conjunctiva with obliteration of the retro-tarsal fold.

Only one incision is made, corresponding to the second incision of the combined operation.

The conjunctiva is carefully dissected up to the superior border of the tarsus. The tarsus is then lifted and dissected from the tissues overlying it, and removed. Seldom are any sutures required.

As Wooten has remarked, these operations are a confession of failure. Failure on the part of the physician to cure his cases before complications begin, or failure of the patient to submit to treatment.

The combined excision follows closely nature's own method of effecting a cure, but does in a few minutes, without visual impairment, what nature takes several years to accomplish, often with destruction of sight. In the natural progress of the disease the roughened conjunctiva becomes smooth, the retro-tarsal folds become obliterated and the tarsus atrophies.

The operation substitutes smooth conjunctiva for rough, obliterates the fornix, and removes most of the tarsus.

Following the operation pannus disappears, ulcers heal, and the subsequent treatment seldom exceeds six weeks, contrasted with the ordinary time of effecting a cure which varies from six months to three years.

The patients are enabled to resume their occupations without loss of much time, and become producers again instead of objects of charity.

What contra-indications are there to those operations?

1st. It is not advisable to operate in the early stages of trachoma when less radical measures will suffice.

2nd. The combined excision should never be done in the completely cicatricial stage, with obliteration of the retro-tarsal fold. Preference should be given in these cases to the tarsal resection of Kuhnt.

Pannus and corneal ulcers are not only not contra-indications, but are positive indications for the operation.

By operating not later than the first signs of corneal involvement, I am convinced that many eyes will be saved which would otherwise be seriously compromised.

Two patients have consented to come here tonight to show the results of the operation:

H. B. Aged 23. Suffered from trachoma for eight years. Was referred to me by Dr. Mucklow. When I saw him first he had a mechanical ptosis with much photophobia. Numerous superficial corneal ulcers were present on both eyes and pannus was commencing. I performed the combined excision on both eyes eight weeks ago. In four weeks he was back at work, ulcers healed and the pannus gone.

J. S. Age 27. Suffered from trachoma for fifteen years, had the expression operation performed four times. Right eye was cured but the left grew worse. When I saw him three months ago he was unable to work because of pain and photophobia. He had marked pannus and a fairly deep ulcer. I did a combined excision and in two weeks after leaving the hospital he had secured a position, and has been working constantly since. His ulcer has healed leaving only a slight macula and his pannus has disappeared.

In conclusion, I wish to express my indebtedness to Dr. Jameson, through whose courtesy I was enabled to operate on the majority of my cases.

## NOTES ON FRENCH AND ENGLISH GYNECOLOGY.*

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THE purpose of systematic travel from clinic to clinic or the occasional visit to see the great men at work is not so much a quest of striking novelties—for these are not many—as to keep one thinking and out of a rut, to force review of methods and to make sure that one is up to the average technic of his time. It is a rough approximation of the truth to say that any operator seen at his table may be readily ticketed as in one of two classes: he sees no one but himself operate and is stationary and self-satisfied, or he's an observer of others, progressive and humble minded. In travel one gets to believe that devising of new things—or of odd ways of doing old things—is often of less use toward helping a specialty onward than the selection for study of some act or series of acts that call for incessant repetition and the determination to better these. The commoner the action the greater the service in abbreviating or standardizing it. It will be worth while, for instance, to record among many famous surgeons their practice in the matter of putting down and picking up of instruments, or the tying of knots. There is, indeed, hardly a step in the simplest operation that will not furnish years of study—study of which almost anyone is capable and in which one may render large service.

The gynecologist who speaks German can be of more profit to the American (particularly if he understands the language) than that of the French and English tongues, but among the general surgeons speaking the latter languages are some shining exemplars that Germany does not outclass. In consideration of the patient first—whether as worker, wife or mother, or as a woman to whom tender care is due—the list may well run in this order, the United States, Great Britain, Switzerland, France, Germany, Austria. To the English speaking races a patient is rarely "Das Material." As to indications for operation, and judgment in the application of a particular operative procedure, the same order seems to hold. In consideration of abstract science Germany and Austria easily rank first, whether for scholarship, organization, average equipment, thoroughness of study and try-out and follow-up, or for records and laboratory facilities. For craftsmanship America leads. The Frenchman has much better manual dexterity than the German but less good technic.

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* Read before the Brooklyn Gynecological Society, Nov. 6, 1914.

The separation of the departments of gynecology and obstetrics in teaching and hospital appointments obtains in Britain and France, the combined chair (as in Germany) being rare. The lower social status of the English doctor is well known and a thing hard for us or for those on the Continent to understand. France does not exalt the title "professor" as the Teuton does, and she calls her doctors "Monsieur" in a fashion more democratic than our own. Yet in the great popular vote as to who the greatest Frenchman was, Pasteur led Napoleon.

The real university plan is followed in France. Pozzi, for example, is professor of gynecology in Paris. For some other gynecologist to be very prominent outside the university is difficult, and a man of great ability, Doyen, is driven, in some part, to be an Ishmael. In London, on the contrary, there is a scatter of medical schools, more or less uncontrolled as with us and presenting the same rivalries and waste effort, though gradually centering on the university. A degree of competition is evidently healthy, however, as shown in the extra-mural school of Edinburgh, which brings forward a number of distinguished men. Neither French nor English professors are moved up from one university to another as in Germany, nor are the students free to migrate. London gynecology is partly ineffective because of diffuseness and self-satisfaction. The Chelsea Hospital for Women, for instance, has sixty-five beds, and five or six surgeons on the staff, each with eight to twelve beds; and one of the surgeons who has done over one hundred and twenty-five Wertheim's has never seen any great foreigner do the really radical operation. The single head, the responsible chief with adequate salary, material, authority and assistance—and a requirement of clinical travel—should change this showing, for the men are at hand. To the needs the juniors are alive.

In technic the general observation is made that the foreign operator does much more of his own work than is the rule with us. He assists himself notably. He often ties, cuts and sponges himself. Yet he obtains no small speed. His assistants are usually far better trained than ours because they work longer with him. Man or nurse, the same individual has learned to know, by years of association, just what the next need or move of the surgeon is to be, and the assistant, even when changed, as in Britain, does not stay less than six months, and is a senior on salary. The operator may even thread his own needles and lay out his own simplified outfit. Lessened infection is said to result from a minimum number of persons in contact with instruments, sponges and wound. The constant scissor or knife work in lieu of blunt dissection is noteworthy, but one rarely sees a Mayo scissor separation. They have not yet abandoned cutting needles for our round taper point. Ligatures are tied far tighter than is the average American practice, probably from the silk habit, and lack of catgut gentleness. Sutures, too, are dragged home till the wound edge looks like a scallop shell, instead of our simple contact of vessel lining and of opposed raw edges. Layer suture of the abdominal wall is general, silkworm stay sutures almost universal. Michel skin clips are common. Much coarser catgut than ours is the universal rule. Inspection of the appendix when the abdomen is opened for other reasons is not general and routine examination of the gall bladder and upper abdomen under these conditions is very rare. Measures for shielding the raw edges of the abdominal incision during work were noted in only a few clinics, and no perfect method has yet been seen.

Berkeley sews rubber down over these surfaces, but it drags about from over-elasticity, as thin reinforced rubber would not.

Many of the English operators still use silk and give as a reason that the hospital is too poor to afford catgut. Yet, even where, for the same reason gauze sponges are squeezed dry and go back again and again into the abdominal wound, it is to be noted in these same hospitals, in contradistinction to our false economies, that the house surgeons are salaried, receiving from $125 to $450 or even $750 a year, and the registrar or medical man in a department responsible for its histories gets $250. The nursing abroad cannot cost as much as ours, as the trained nurse hardly exists. The female nurse, even in Scotland, cares for men and without screens. In France I saw women shave and scrub the male before herniotomy in the open ward.

I dip into such a wealth of notes that it is only possible to pick an item here and there as samples.

In the remarkably organized and smoothly working operating room of Jones of Liverpool nothing touched what went into the deeper parts of the wound except the metal instrument; no sponge handled; every stitch threaded into the Reverdin by being held in forceps over its opening eye. Stiles of Edinburgh is the Mayo of Great Britain just as Faure of Paris is the Fowler, and both are wonderfully simple and direct in their methods. Moynihan was spoken of as a prince among surgeons, best of the intestinal operators. Before he makes an incision he runs some transverse scratches to locate the points that should be opposite when one comes to close the wound. He guards the skin with mackintosh under gauze. In Manchester one finds the duties of the operating room nurse framed on the wall, the ground glass of the windows used as white blackboards for colored chalk; and the histories kept in portfolios of cardboard on the inside of which are pasted two printed pages covering every possible item in the history and examination. Lockyer in London is seen to cover bowel with rubber dam under the gauze, Tixier of Lyons, one notes, in hysterectomy, stitches his bladder early to the suprapubic retractor and thus keeps it well out of the way; and Fabre calls students to labors by a big white globe at the maternity window—red if the case is operative—and so the ideas go. Here we find horse serum always at hand to check oozing from oozing surfaces—in Walther's clinic, and ask why not for the interior of the uterus in menorrhagia? There we see Spencer unite the rectal mucous membrane in a complete tear with tiny silver wire, or Lyons cooking its instruments in vaseline. We note the nearly universal employment of gloves, the general dependence on iodine for the skin, and the lifting table with ability to use an extreme Trendelenberg incline, or a swing in circle. We decide to train again with the Reverdin to see if with a good team we can save time (in all but deep sewing) as they all do in Paris. There, too, the broad suprapubic retractor opens up the wound yet does not limit flexibility in the upper parts of the incision. In England one is amazed to see the uterus fixed without fear by its anterior wall with buried silk to the suprapubic region and to hear Giles give his careful summary of the pregnancies that have followed this procedure, said to be the English fashion. It is not a little interesting to see as some of the coolest and best traveled operators the dignified and comely women of London working in fine hospitals of their own. It is curious to us to see the biggest city with only nursing homes for private case operation. If, however they were all as finely set as one in which that clever surgeon Walther operated in Paris (sixty beds at $4.00 a day) no complaint could be made. Apropos of exquisite surroundings the gardens of the American Hospital on the outskirts of Paris match its interior and its wide roof garden. The glass roof is painted inside in summer and the curtains are the only unfadable material—tan colored Italian sail cloth at 40 cents a yard. In Paris, Faure will be the next professor of gynecology. He is a man of enormous energy and speed. His films of operations were valuable teaching. In Geneva is the finest hospital yet, costing $7,000, a bed, with its amphitheater finished in fawn tile. Here as in Lausanne, was good gynecology, and in Lausanne worked little lightning Roux, whose efficiency ranked with Jones. Here, too, there is a training school for nurses, of our kind, rare in Europe.

If I have thus given you even an inkling of the stimulus two or three weeks on the benches of the keenest workmen in our craft may impart, say on a trip every third year abroad—and every year in America—and can stir you to travel a bit, this half hour is not ill spent.

# EDITORIAL

## A HOSPITAL IDEAL.

IN every medical community there exist two general classes of physicians, those who are associated with hospitals and those who are not. Between the two there is a difference of viewpoint that has given rise to a degree of misunderstanding and even of jealousy. The physician who has been so unfortunate as not to obtain a hospital affiliation, and he is of the majority, feels a genuine discontent and seems prone to regard his more fortunate confrere as one who, having a privilege, strives to monopolize it to the disadvantage of his less fortunate competitor, and this conception may in some instances be true. In this situation, what are the factors which are actual and what are the imaginary ones? There are doubtless some grounds for the attitude of both sides which are partly the fault of the system and partly the fault of the methods of medical training heretofore too common in this country. The existence of a large number of poorly equipped medical schools, now rapidly disappearing, has turned out a number of practitioners of medicine inadequately equipped for their life work. Many a young man has entered the field of medicine recognizing in it only a means of livelihood and blind to the ideal of personal sacrifice that should be the actuating force in every physician. Whether one holds with St. James or St. Paul on the relative value of faith and works, it is true of medicine as of no other calling that work without faith fails of completeness for lack of an ideal. It follows that the man who sees in his medical practice nothing but a money valuation will most naturally regard a hospital affiliation as most desirable for the prominence that it gives and the money return that he thinks may accrue from it; while the enthusiast who works for the sake of the doing and to whom mere gain is purely secondary, will use his hospital position not only as a means for bringing him new experience through service, but also he will demand from others an equal consecration and will resent the spirit that seeks to make a hospital affiliation a source of profit only. It may be that the prime idea from which the hospital sprang has been forgotten. It must be first of all a place for the care of the sick and in its beginning was either a pest house or a charity; in its later development it has grown into a hybrid of charity and convenience; convenience for the well to do and charity, often grudging, for the poor. In its best development the hospital has become a training school not only for the attending physician but, what is more important, for the beginner in medicine and as such it may rightly demand that those who serve it as visiting physicians and surgeons shall recognize the responsibility that rests upon them and shall strive to the utmost of their power to raise its efficiency to the highest point. This means not only that the patients for whom the hospital primarily exists shall receive the very best of medical skill, but that all who are associated in the service of the institution should be imbued with the true spirit of service, which means self sacrifice, patience, consecration to the ideal of giving one's best, irrespective of money return. There are doubtless a few who are essentially so big and broad-minded as to be fitted without preliminary training for such a service, but the average man needs a long apprenticeship in close personal touch with a master of his craft to learn the lesson of service. Just as the child admires the skill of the magician and wishes to do the feats he sees so easily accomplished, so the man without a preliminary hospital training may fail to recognize the arduous apprenticeship that has fitted someone else for the hospital position which he covets. So, too, it is but natural for the hospital physician to prefer for his successor the apprentice whom he himself has trained.

On the other hand it is claimed that, as the hospital is the creation of many hands and is conducted for the public, its benefits should be extended to all physicians for their personal good in order that they may be the better fitted to serve the public. This social idea of the hospital has its attractive side. It is right that an institution of learning should be in some measure open to the needs of all who would learn and could it be so arranged that every hospital should be made free for the needs of all physicians a desirable ideal would be attained; but it has been said no man can serve two masters and no institution can be successfully administered in which a centralized authority is lacking. In order to guarantee continued upward progress in any department of a hospital, that department must be under the immediate control of some one man or group of men who, with similar ideals, are striving to broaden and to better the scientific side of their work. Could it be arranged for such a man or group of men to extend the opportunities for study and instruction that every hospital service affords to groups of the general profession there would be no ground for complaint provided that those groups were seeking scientific improvement only. So soon as the desire crops up to utilize such a privilege for gain only, the plan must fall to the ground. Such an ideal can afford nothing for the man who sees in the hospital merely a place where he can take his patient, have him cheaply cared for and because of the reflected glory of the institution demand a larger fee for his service. Nor can anyone reconcile the two points of view, work for pay and service for its own sake, and the hospital problem as it presents today cannot be solved until the element of professional selfishness is made secondary to professional self sacrifice.

H. G. W.

## THE QUESTION OF CONTRACT PRACTICE.

A LETTER received recently from an out-of-town physician again raises the question as to the ethics of contract practice of various sorts; in particular "the ethics of men in general practice doing contract work for corporations, lodges, etc." The subject is one that has several angles and, depending on the point of view, may be entirely ethical, or only undesirable, or distinctly bad. Viewed from the standpoint of the man who must make a living and who enters practice with scanty resources and no general acquaintance sufficient to assure him maintenance, it comes like a Godsend to acquire a connection with some lodge, or group of employees, or other club that provides free medical treatment for its members and a small but steady income for the physician. The question may be properly asked, why should not men combine to minimize the expense of their medical care, and why should not a physician accept an annual fee for which he gives his attendance to each member of the lodge as required? Viewed in the abstract there can be few valid objections to such a practice, for it partakes of the nature of industrial benefits and insurances and provides against contingent sickness, which is a matter of wise forethought; and supplies steady employment to a physician. Worked out to its practical conclusion, however, one often finds that the general feeling among the lodge members is one of uncertainty and lack of confidence in the qualifications of the lodge doctor. Almost every physician has had the experience of being called in to administer to a sick patient and of being told that "they have their lodge doctor, but they don't have entire confidence in him." A system such as this must have some intrinsic fault to permit the lodge doctor to be viewed with suspicion by the very people who subscribe for his services; and the question naturally arises, is it the fault of the physician, or of the system, or both? Add to this that the bulk of the profession undoubtedly looks askance at lodge practice and one becomes assured that it is not good, although it is difficult to put one's finger upon the rotten spot and declare just where the trouble lies. It seems unreasonable that the acceptance of a fixed annual retainer should induce criticism of, and foster lack of interest in the man who accepts it, but it nevertheless seems to be true that the lodge doctor is apt to regard his lodge practice as of secondary importance, to give perfunctory service, to use it as a stepping stone to things which he regards as more desirable and to permit himself to fall into a careless routine as regards lodge patients.

What can one say about the service rendered by the employees of the large insurance companies and civil service appointees in state and municipal positions, such as medical officers in the Department of Health, Police, Fire and so on, which also comes under the heading of contract practice? It may be argued that these are salaried positions, that they require specific duties and represent a high order of service to the community, but they nevertheless resemble lodge practice in so far as the physician receives a fixed salary and renders specific service. The tendency here, as most men who have tested such employment will acknowledge, is to blunt the keenness of purely professional work and to drop into a sort of departmental routine. These are generalizations and must necessarily find many exceptions, but nevertheless it is approximately true that the average physician tends to deteriorate unless held up by the demands of professional competition. It may be argued that the combination of private practice which the irregular leisure of salaried employment permits a physician, affords him sufficient incentive to keep out of the ruts incidental to routine work. This is probably true for the average man, but unless he has a well developed sense of personal responsibility he is likely to permit the comfort of an assured income to make him a trifle too independent in dealing with private patients, at the same time that the fixed salary tempts him to put forth only enough effort to make it secure. Two factors are essential in making this combination of salaried employment and private practice work together for the best results—an efficient supervision of departmental work to supply the necessary stimulation, and some dispensary or hospital association to keep the individual interest keen and polished. It is manifest by comparison that lodge practice cannot supply the first of these demands and that consequently the lodge is likely to be the sufferer; while on the other hand the well established prejudice against lodge practice is likely to prevent obtaining a hospital association.

There is still another class of employment for physicians which must be utterly condemned; the farming out of one's services for a fixed salary or commission to some corporation which pretends to supply medical care to families at a small weekly charge. The person who pays 10 cents a week for medical care gets 10 cents' worth and no more. The physician who gives such service renders no more service than he can help and his privilege of peddling drugs to eke out his salary is itself the strongest sort of a temptation to victimize rather than benefit the patient. While it is possible for a young man without money and without friends, but possessed of unusual moral force to assume such a position for temporary aid and not be mastered by it, such a possibility is improbable, for the very fact of farming out his talents for the commercial gain of some one who is outside of the profession would be the one thing that a young man of really high principles would not do.

There is today a very evident trend toward practical socialism in medicine whereby the State is already providing in some measure medical service of good quality for the poor; and there are those who look forward to the time when adequate medical care by the State will become as much a public function and duty as the supply of water and sanitation. The recognition of this need postulates the recognition of present faults in the quality of medical service that the sick poor are now able to command at home and carries an indictment against lodge practice and an argument in favor of medical service through State aid.

H. G. W.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN PATHOLOGICAL SOCIETY.

The meeting of October 8, 1914:

### SYMPOSIUM ON AUTOPSIES.

1. Autopsies in the Practice of Medicine, J. M. Van Cott, M.D.
2. Autopsies in the Practice of Surgery, W. B. Brinsmade, M.D.
3. Autopsies and Pathology, Archibald Murray, M.D.
4. Autopsies from Layman's Point of View and Hospital Directors', N. S. Jonas, Secretary Brooklyn Jewish Hospital.
5. Religious View of Autopsies, Rev. J. L. Belford.
6. Autopsies and the Undertaker, H. J. Edwards, President of Kings, Queens, Nassau and Suffolk Counties Undertakers.

Discussion by Dr. Strasser, Superintendent Jewish Hospital, Father Belford, Drs. Bartley, Wight and Terry and H. J. Edwards.

Rev. J. Belford, in opening the discussion, said:

"If permitted, I would like to give a good 'prescription' for obtaining an autopsy. An old gentleman died in a hospital that I know of. His two sons came to be with him when he died. After his death they were asked to consent to an autopsy. They said 'Oh! no; we wouldn't have it at all.' So the surgeon, who was very anxious to have it, said, 'Well, of course, if you don't want it, it is all right, but, you know, he is entitled to it.' 'Oh! he is?' 'Yes, he has paid for it.' 'Well, then, give it to him by all means!'"

Dr. J. Sherman Wight, in discussion, said:

"I see that Dr. Terry, Superintendent of the Kings County Hospital, is here tonight. He has worked out a method for facilitating the obtaining of autopsies there and has brought a review of the work to the attention of the general medical public, and if he will tell us about it I am sure that it will be very interesting."

Dr. Terry, in discussion, said:

"I have been given credit by Dr. Jarvis White for something for which I deserve no credit. The methods he refers to are not new. I have simply adopted that which has been worked out elsewhere. One thing he refers to is the use of trained men to secure permits for autopsies. That method was used and is still used on Blackwell's Island by Dr. John H. Larkin and in his hands it has been very successful. Many internes, if they are asked to approach a family to get an autopsy, feel as much disinclination to ask the family for an autopsy as the family feels to grant it. If, however, men are trained to approach the family they lose this feeling. They learn, moreover, that it is necessary for them to avoid scaring or shocking people by using words like 'autopsy' and 'post-mortem,' they speak of an examination and avoid the word 'autopsy,' for it has a bad sound and the public do not like it. Trained men never speak of 'cutting up the body.' They try to interest the families in the cause of death with the view of securing an autopsy. In asking for a permit the trained man puts it, of course, on the usual grounds, but it is done in a somewhat better way than the average interne would be able to do it. These men (they are medical students as a rule) go to the families and get a rather large percentage of consents. We have been able to start this method recently at Kings County Hospital and it has been very successful. From January to August, 1914, inclusive, we autopsied a little less than 9 per cent of those who died at Kings County Hospital. Our lowest month's record was 2.4 per cent and this was in August. The trained men began to work for us Sept. 7th and for September our percentage was 14.7. The 'runners' we are using at present are a junior and a senior at the College of Physicians and Surgeons in New York. For their maintenance they visit daily the families of patients dying in Kings County Hospital.

"The other point referred to by Dr. White is our attempt to make our autopsy findings as easily accessible as possible to the Hospital staff. We have at present a weekly demonstration in the Laboratories in order that we may show the results of the autopsies of the previous week. In this way we try to stimulate the interest of the internes and visiting physicians all of whom are welcome at these demonstrations. Thus far we have demonstrated only gross specimens, but in a week or so we expect to use a projection apparatus which will enable us to show the microscopic changes in the organs and we hope that this will increase the interest shown in the demonstrations.

"I have profited a good deal by what I heard here tonight. Some of the points brought out were quite new to me and I hope to profit by these in my future work.

"There is one point that was not mentioned tonight although it is in line with the suggestions made by Mr. Edwards. It is this: those who perform autopsies would, I think, avoid a certain amount of opposition on the part of undertakers if, after removing the heart, they would carefully tie off the vessels springing from the arch of the aorta. In this way the circulation can be preserved for the undertaker. This suggestion I first heard from Dr. MacCallum, and since then I have practiced it very frequently. As a result undertakers, in speaking to me about the bodies at Kings County Hospital, have said that if other doctors would only tie off the vessels in this way there would be less opposition to autopsies by undertakers.

"We cannot, I am afraid, carry out all of the suggestions of Mr. Edwards. For instance we cannot cut the skull as far posteriorly as he would like to have us do. If we did we could not remove the brain intact, but I shall endeavor in the future to make my saw cut in the calvarium as far posteriorly as I find it possible to do and still examine the brain as it should be examined."

Dr. E. H. Bartley, in discussion, said:

"I certainly have been enlightened, not so much by what the doctors have said but as to what these laymen have said, and it is nothing new even what they have said, except to relate instances that are new to us. I think that most of us have known of just such occurrences as they related and there are physicians who will make an autopsy in that careless way. I have seen them made and I have seen the body left for the undertaker to fix up and make presentable. I think that that is one thing which we ought to take to heart. Everybody and everyone making an autopsy, or proposing to make autopsies, should take it to heart. A very great deal depends on them and their method of making an autopsy, or, rather, in their care in leaving the body in a presentable shape.

"It is certainly very difficult to educate the public. It does not come to the same person or group of persons very often to have this question presented to them and it comes entirely new to the family. If you educate that family up and persuade them to grant an autopsy, the next family is just as hard to deal with as the first, and so we go on until there has been a death in every family in the community. Educating the public in that way is exceedingly difficult.

"It seems to me that we ought to do something more. This meeting is all right. It seems to me that this matter might be recommended to the general County Society; that we have a similar meeting where all of the medical profession of Brooklyn at least will have an opportunity to listen to the same sort of discussion that we have had here.

"The presentation of the subject by Mr. Edwards is certainly to the point. We have given the undertakers credit for objecting to and throwing obstacles in the way of securing autopsies. The reasons have been very clearly described and I think they are just. I think those reasons are clearly presented and to the point.

"I would like to see some resolution passed here recommending that the County Society take the matter up for a general discussion of all the medical profession in Brooklyn and from that start out with perhaps some sort of a campaign of education of the public."

Dr. E. H. Bartley, in discussion, said:

"I should like to ask Mr. Edwards if, as Dr. Terry suggests, it would be entirely satisfactory if the arch of the aorta were tied off."

Mr. H. J. Edwards, in closing the discussion, said:

"Yes, I think it would, but the point is that we wish to get as much of a circulation as possible. Of course, if the circulation is severed completely, that is, if there are two or three of the arteries that are severed so that when the fluid passes through (the average embalmer uses the brachial artery to inject his fluid), and if the heart is removed, the fluid simply sinks down into the abdominal cavity and does not preserve the upper section of the body at all, so if the aorta were tied off, it would give us more or less of a satisfactory circulation. I should be pleased if the superintendents of the other hospitals would do the same thing, I am sure."

## Autopsies and the Hospital Superintendent.

*C. E. Strasser.*

Superintendent Brooklyn Jewish Hospital.

I am not prepared. I was not asked to talk, but I know something about autopsies and it was always an interesting subject to me.

About two months ago I was in St. Paul at the annual meeting of the American Hospital Association and I there met a Dr. Rider, who is an old hand at Hospital management and who is at present the Health Officer of the State of Wisconsin. I talked with him and he told me that several states in the West formed an association (about two thousand physicians belonging to the association) with the object in view of obtaining autopsies legally in their states. The doctors went very systematically into the matter and sounded the laity in order to find out just what the sentiment was. They first found that everybody was opposed to autopsies. As far as the laymen are concerned there are very very few exceptions. Intelligent people, as well as others, do not want to hear of an autopsy. As Father Belford remarked, the first objection is as to the desecration of the dead and then it was said that an autopsy is performed by doctors to satisfy their morbid curiosity, and their wish to find out whether they have guessed correctly the nature of the patient's illness. The fact that the doctors tried to impress upon the lay people that an autopsy was necessary for the advancement of science, etc., did not have any impression at all and so this matter was dropped.

There are few patients, or relatives of patients, who are willing to offer themselves, or their relations for the purpose of advancing science through the medium of autopsies.

We in the hospital find immense difficulties to obtain autopsies. We do our best however to get them. We go so far as to tell the father whose child died of typhoid fever that there may be something in the nature of an inherited family weakness or some failing in the body of his child which ought to be found out, and that a knowledge of the condition which only could be procured by an autopsy might be of great value should another child of the family be taken ill. I will call this justifiable deception. We tell the people that when their father or mother or son died of a certain disease, of which the diagnosis was written on the certificate, that while the diagnosis is the best of the knowedge of the doctor, the diagnosis is in no way positive and we try to tell the people that they are entitled to learn the positive cause of death and that they should insist on an autopsy to ascertain what the patient died of.

We are using a harmless deception but we have to do something to get autopsies, and we are getting mighty few.

Now another thing is the insurance. We tell the people that the insurance companies require so many answers to so many different questions, or catch questions, that it is absolutely necessary to have an autopsy, otherwise we won't be able to answer the questions. Everybody doesn't take to these things, but once in awhile we get an autopsy.

I think it is absolutely necessary that some kind of law should be enacted whereby autopsies should be permitted under certain restrictions. In Europe the patient who goes into a hospital knows that an autopsy may be performed on him if he dies.

I do not know much about the Phipps Institute in Philadelphia, but in the Journal of the American Medical Association there appeared a paper read by Dr. Flexner wherein he states that there is an institute in Philadelphia (the Phipps Institute) where there is the same ruling as in Europe. Anyone entering that institute must sign a consent permitting an autopsy on his body if he should die there. According to this paper, 98 per cent of autopsies were performed in that institute. The average for American hospitals all over the country ranges from 2 to 24 per cent of autopsies performed.

I would like to say one more thing and that is this: I think that the family physician is the man to procure the autopsy and not the hospital superintendent or his assistant, and not the hospital surgeon or interne. The family physician, who is in contact with the people for years and knows them, ought to be the man to exercise all his endeavor to obtain an autopsy.

## Autopsies and the Undertaker.

*H. J. Edwards.*

President of Kings, Queens, Nassau and Suffolk Counties Undertakers.

It is not often that an undertaker has the privilege of addressing so many of the medical profession at one time. Most of us have met a great many doctors in the course of our business, but usually the meetings have been brief and we have not had the opportunity of discussing the many subjects that are of mutual interest to physicians and undertakers.

Your president invited me to speak to you tonight on autopsies and to tell you of the undertakers' side of this subject. This is a matter that has received much attention at various meetings of the Undertakers' Association and I am very glad to have an opportunity of telling you of conditions as we find them in connection with autopsies.

We know that in many cases autopsies must be performed to ascertain the cause of death, especially where the records of a case must pass through the office of the Coroner, but we also are of the opinion that in a number of cases where post-mortem examinations are made they are not made to find the cause of death and in not a few instances nothing is gained by the examination.

Much is expected of undertakers, for they are supposed to be able to make the face look as well after death as before, and when that cannot be accomplished, as often happens, and the casket has to be closed so that the relatives and friends cannot see the body, the undertaker in charge is sure to be criticized for his work, usually most unjustly.

I can assure you that when an undertaker is called upon to take charge of a body on which an autopsy has been performed, it is with trepidation that he goes to prepare that body for the funeral and burial.

The embalmer of today requires the circulatory system to obtain the best results of his work, but when an autopsy is made you all know what happens to that system. I have asked many times that care be used so that the main arteries will not be severed, but the case is rare where the circulation is not spoiled before the operation is completed.

However, even under the conditions which I have just mentioned, we would be able to get fairly good preservation by other means and we would have little objection to offer if that were all.

Usually when an autopsy is performed, it is not complete unless an examination of the brain is made and this is what gives us our greatest trouble.

When the top of the skull is removed, or rather replaced, no care seems to be taken in trying to properly fit it in its place. When the top is not properly replaced, a ridge is formed across the forehead, which gives the face a most unnatural appearance.

In order to remove this ridge across the forehead, it becomes necessary for the stitches that have been put in the scalp to be removed, the top of the skull properly adjusted and the scalp sewed up again. This may seem a very small matter to you gentlemen, but it sometimes takes considerable time when every minute counts, and it could be obviated by just a little care when the autopsy is performed.

I would like also to call your attention to the methods of performing autopsies. When the scalp is cut so that the skull can be reached, it is our opinion that the proper way to cut it is across the top of the head, from ear to ear, but not infrequently have we had cases where the cut had been made around the head from ear to ear, across the forehead.

Many complaints have been made to me as President of the Undertakers' Association by undertakers who have had charge of bodies on which autopsies had been made, that when they reached the bodies they were found left just as the doctor had left them, no attempt having been made to make them presentable. All the sewing up had been left for the undertaker to do and we do not feel that it is part of our work to put a body together after it has been mutilated by physicians.

Another cause for complaint arises from the length of time it takes before autopsies are performed, especially when a death occurs in a hospital. It is on the average from twelve to twenty-four hours after death before we can remove a body which has been posted, and during that time the family of the deceased are constantly inquiring of us when we are going to bring the body home and we have difficulty in convincing them that the delay is nowise up to us.

When I was asked to present the undertakers' side of this matter I was at a loss to know just how to offer our views, but I have conferred with other officers and members of the Undertakers' Association and while we do not wish to be placed on record as objecting to autopsies, we do want to protest most vigorously against the manner in which most post-mortem examinations are made. It was the unanimous opinion of those consulted that if we placed the facts as they exist before you and quoted a few concrete cases that have come to our notice, you might, through your organization, help to remedy the conditions which are so objectionable to not only the undertakers, but also to the families they serve.

Of course, in reference to the Coroner's physicians, autopsies are required by the law where there is the least doubt as to the cause of death, but this does not apply to the ordinary practitioner. However, the tendency to perform post-mortem examinations is rapidly increasing and in many cases where permission can be obtained for examinations, they are made. Especially is this so in hospitals and public institutions and it will be argued that it is in the interest of science as there is a number of surgeons who do not get sufficient opportunity to operate on the human body unless this practice is resorted to and in the absence of any refutable facts, we will grant that this is true.

However, we present our side of the matter to you and ask, in so far as you can possibly do so, that you consider the family of the deceased as well as the undertaker who is to prepare the body for burial. I am quite sure that there would be less objection to autopsies than there is at present if some of my suggestions were followed.

With your permission, I will quote the facts in four cases to more forcibly bring before you the conditions of which I have spoken and while I will refrain from mentioning the names of doctors, undertakers and institutions, the facts as I give them to you can easily be verified.

The first case is that of a young woman, whom I am told was very beautiful. She was treated some time at a local hospital and was supposed to be improving when, suddenly, a change came and she died very unexpectedly. The authorities at the hospital asked for and obtained permission for an examination. When the undertaker had the body delivered to him he found that the scalp had been cut across the forehead and that it had been sewn up most carelessly. The stitches were removed and new ones put in more carefully, but the cut so disfigured the face of the young woman that her family would not allow the large gathering of relatives who attended the funeral to see her.

Another case, was that of a young man removed to a hospital suffering with locomotar ataxia. He was in the hospital but a short time when death came to him. A certificate of death was refused unless an autopsy could be performed. The father of the young man gave his consent and later in the day the undertaker was notified to take the body from the hospital. You may imagine his consternation in finding that the body had been opened from the throat to the pelvis and from the back of the neck to the rectum, and left that way.

In another case permission was obtained for a post-mortem examination and the undertaker, upon receiving the certificate of death, asked the doctor if the circulation had been much disturbed and he was assured that only a little examination had been made. When the embalming was done the fluid went into the artery so fast and without producing the desired result that the undertaker thought he would raise the artery in the neck and flush the head with fluid direct with the object of clearing the discoloration that appeared on the face and neck. He opened the incision made for the autopsy and, to his surprise, found that every artery had been severed and every organ in the man's body removed and the cavity filled with oakum and absorbent cotton. His amazement was the greater for having been assured that nothing had been disturbed.

In conclusion, let me say that the conditions to which I have called your attention do not exist in every case for I have seen many where great care was taken, not only not to disturb the circulatory system, but also to put the body in such shape after the examination that the average person would not know that an autopsy had been held.

I appreciate the opportunity I have had tonight and I trust that when you have thought over this matter carefully it may result in better conditions for the families of those on whom post-mortem examinations are held and for the undertakers as well. I thank you.

## Autopsies from the Layman's Point of View and Hospital Directors.

*N. S. Jonas.*

Secretary of Brooklyn Jewish Hospital.

I think that I ought to apologize for appearing before you to say anything about autopsies. I have no paper to read and no scientific knowledge to impart.

Everything that I could have said upon that subject has already been said by the gentlemen who have preceded me, but when the invitation was extended me to come before you I felt that as a layman and a director of a hospital, if my presence could lend any encouragement to this movement, which I approve of, at least I wanted to be present and give my moral support to a movement which I have learned to consider of the greatest importance since I have been doing hospital work.

The best way to find out all about a proposition is to get the proofs and I do not know how you gentlemen are going to get the proofs unless you have autopsies to determine a correct or an incorrect diagnosis. Every one here admits that autopsies are necessary, so a debate is hardly in order now on that. The only question from a practical standpoint is how to educate the public to that point of view so that they will permit you to use the bodies of relatives and the difficulty which we have found in The Jewish Hospital is with the lawyers on our Board and with the families of relatives. The lawyers tell us that if we perform an autopsy without the permission of the relatives we are liable to incur a lawsuit and it is very hard to get the permission of the relatives to permit us to perform an autopsy.

It seems to me, from a practical viewpoint, that this audience, if they would use to the best advantage the influence which they possess, could immediatly start an educational movement which would very quickly bring results. Dr. Murray's suggestions along those lines were splendid, in my opinion, but we here in Brooklyn, for instance, would have to take hold of the subject locally and everyone of you physicians have influence with directors of hospital boards and with public men and what you haven't got your directors would have if you made them enthusiastic; along the lines of a direct suggestion a meeting of this kind, small in numbers but large in enthusiasm, might start the ball a-rolling and would perhaps bring something in the way of results. You could have a popular-priced banquet (a subscription banquet, if you please), to which you might invite to participate, as a matter of a public policy, every prominent man you could reach as well as all members of hospital boards, and you could have speakers of wide influence in matters of this kind. You could also invite editors of newspapers to be present and make addresses and if they favored the proposition, to advocate it not only in meeting, but prominently in their papers as well. In other words, we all admit that autopsies are necessary and that we must have them, not only for the good of the scientific man, but also for the good of the human race, as we want all the information that we can get for the good of our physicians, ourselves and posterity.

I have learned that autopsies are very necessary and I would like to see more of them done in our hospital.

You must start the educational process and while it is fine to will your own bodies to science (I am perfectly willing to do the same with mine), it is not far-reaching enough, but if you could get a man like Father Belford in a meeting of two or three thousand people with his splendid oratory to tell the people, if he is as enthusiastic as the rest of us, all about this proposition and get it into the press, not in the form of a few lines at the bottom of some column, but instead boldly on the front page, it seems to me that might be one of the ways to do it.

I do not know why Dr. Lintz invited me to come and speak to you As stated, I haven't any scientific knowledge on this subject. I am interested from the standpoint of a layman and I feel sufficiently strongly about the proposition that I would be willing to help any movement for a meeting and try to do as much as lies in my power to bring about results. It seems to me, however, to use your own words, that it is not only necessary to have a meeting of this kind to tell you that autopsies are necessary which you so well know, but it is still more necessary to do something to educate the public to your viewpoint. I have become partly educated because I have come in contact with hospital work and know that the lack of autopsies has hampered medical progress and knowledge.

From time to time I have read in European pamphlets that they have more autopsies abroad than we and I have heard of surgeons going abroad to get knowledge by observing autopsies. It seems to me, as one of the speakers said, that it is time we had that knowledge at home and if at any time I can serve this society in the way of helping it to get publicity in this manner I would be willing to serve you.

I do not think there is anything else for me to say, Mr. Chairman. I thank you.

## Autopsies and Pathology.

*Dr. Archibald Murray.*

The study of diseased tissues after death has had more to do with the scientific development of medicine during the past sixty years than any other thing. The autopsy is the foundation upon which the science of Pathology is built and without autopsies research is hindered, clinical diagnoses are not verified, our statistics are incomplete and our medical students are deprived of knowledge which they should have.

Virchow taught and demonstrated at the autopsy table that every disease represented an anatomically localized process and that, therefore, the goal of all pathologic conceptions must be objective knowledge of, and location of the diseased processes. He held that every physiologic process possessed an anatomic corollary; a disease, therefore, finds expression in anatomic, visible processes. The anatomic changes represent the disease. The only method, therefore, to arrive at a correct knowledge of the origin and course of a disease is to correlate the undeniable and visible autopsy experience of many cases, and to reproduce them experimentally.

The fact that we know today the direct causes of many diseases does not mean that we should stop doing autopsies. Take for example tuberculosis,—The fact that the tubercle bacillus is known as the definite cause of the disease has not at all settled the manner and method of infection. There is even now a decided difference of opinion as to how the infection and dissemination of the bacillus through the body occurs. How are these questions to be settled except by autopsy?

While the autopsy is of great importance in the individual cases of disease, it is equally important for the collection of reliable statistics.

Another point is that the autopsy serves to check the clinical diagnosis, but even if it proves the main diagnosis correct it almost always discloses important associated lesions which in their obscurity escape even the most careful clinical observer.

Some time ago Cabot published the percentages of correct clinical diagnoses of what appeared to be the most important lesion revealed by 3,000 autopsies. I will read only a few: Diabetes mellitus, 95 per cent were diagnosed correctly; typhoid fever, 92 per cent; chronic interstitial nephritis, 50 per cent; acute endocarditis, 39 per cent; chronic myocarditis, 22 per cent; hepatic abscess, 20 per cent.

If the autopsy is so important, why do we get so few of them? Let us compare the statistics from a few hospitals in England and Germany with those in this country. The University College Hospital of London reports 84 per cent of autopsies; St. Thomas, 75 per cent; St. Bartholomew, 79 per cent; the Charite Hospital in Berlin, 93 per cent; Pathological Institute, Leipsic, average for eight years, 90 per cent. In this country, Bellevue Hospital, 10 per cent; Mt. Sinai, 7 per cent; St. Lukes, 14 per cent; Boston City Hospital, 9 per cent.

To make matters worse, the relative as well as the absolute number of autopsies in many of our hospitals has been constantly falling off within the last few years. Five causes seem to be responsible for this poor showing in our hospitals:

(1) Adverse public opinion and religious prejudices.
(2) The existing law.
(3) The undertakers' and burial societies.
(4) Hospital rules.
(5) The claims of the Departments of Anatomy.

I should like to take up some of these points but time will not permit and I will close by reading the recommendations proposed by the Public Health, Hospital and Budget Committee of the N. Y. Academy of Medicine in a report on Post-Mortem Examinations in the United States:

(1) That effort be made on the part of various medical bodies to interest the press in the matter of autopsies with a view of presenting to the public the absolute dependence of medical progress and education on the regular performance of post-mortem examinations.

(2) That effort be made to secure legislation relative to autopsies, similar to that of European countries, which would obviate the necessity of securing written permissions and at the same time safeguard the present rights of the relatives.

(3) That the law should be so amended as to recognize the difference between anatomic dissection and pathologic autopsy made for scientific purposes.

(4) That until such legislation is secured, the boards of managers of all our private hospitals be urged to have the hospital rules so changed as to remove as much as possible the obstacles now placed in the way of securing autopsies.

## Autopsies in the Practice of Medicine.

*J. M. Van Cott, M.D.*

The three great historic periods in medicine are interesting amongst other things because of the fact, that their progressiveness seems to have depended largely upon the performance of autopsies. In the early centuries of our time reckoning, Galen performed autopsies upon the lower animals, especially the higher apes, from which he deduced many facts which entered into his system of medicine. It was a brilliant period and despite the fact that it was full of errors based upon empiricism and mere theory, some of its teachings hold as good today as then. In the second period of nearly fifteen hundred years, the teachings of Galen and his school were accepted as the laws of the Medes and Persians. No Pope was ever more infallible in matters of religion than was Galen in medicine. It was a period devoid of anatomical studies, in which pure dogma was blindly followed, and which produced not a single great mind in medicine. The end of the first period could be linked to the beginning of the third and the interim forgotten, in so far as any real progress is concerned.

The dawn of the third period is ushered in by Paracelsus and Vesalius about the middle of the Sixteenth Century. The former, who possessed both genius and courage, successfully opposed many of the untenable theories then in vogue; while the latter, by his careful and accurate dissections on the human cadaver paved the way for Baco von Verulam to insist upon the substitution of fact for speculative theory.

The spirit of this third period is the quest for truth, a spirit which produced the then wonderful autopsies of Morgagni, which formed the basis of the first scientific volume on pathological anatomy and gave to the author the title of "The Father of Pathology."

From Morgagni's time clinicians have more and more sought the post-mortem table for the unraveling of the phenomena of disease; but progress was not marked until the advent in Vienna of the two Rokitanskys, father and son. They accomplished much in gross pathology, and discussed both humeral and solid doctrines of pathology in conjunction with clinical teaching. But it was left for the Father of Modern Medicine, Rudolph Virchow, to establish autopsy work upon a scientific, permanent basis. His Protocol is a model of method and scientific exactness; while his Cellulan Pathology, constructed upon the then recent theses of Schleiden and Schwann on the structure of vegetable and animal cells, is epoch-making in the entire history of medicine.

By his systematic methods and exact study of ultimate tissue changes in disease, he clinched forever the relationship of the clinician to the pathologist, and discovered to the medical profession the only logical method of making an anatomical diagnosis of a case by means of its clinical data; and this is just the relation of the autopsy to clinical medicine today.

Our patient has no longer swallowed a horse because there is a saddle under the bed. He is a living complex of organs which, like the wheels of a finely-balanced chronometer, must be in perfect form and harmony, else the mechanism will not work. The skilled physician, like the artisan, does not take long to locate anatomical changes, because he knows just how to look for them.

After an experience of over four thousand autopsies, the writer can attest to the broadening of view point and the grasp of significance of clinical phenomena which such mental pictures bring. The human body becomes transparent and functional disturbances are read in terms of pathological form changes. In other words, semeiology is transformed into anatomical diagnosis.

On the other hand, the post-mortem table is very valuable in disclosing to us our errors of diagnosis, and thus fortifying us against future mistakes. It checks up our special diagnostic methods and frequently indicates our (the physician's) failure to save life. As has already been stated, only those periods of medical history have been progressive where the autopsy was in vogue; and it should be the persistent effort of every practitioner of medicine to obtain autopsies on patients who die, whether they be in his private or hospital practice. When relatives and friends have become educated to realize the value of an autopsy and what it may mean to them for comfort, or future action, to know what has caused death, we will see a large and permanent increase in the number performed.

How well I remember my sense of relief at an autopsy on a case of pneumonia which died in hospital during my service as an interne. The visiting physician had given me the case to treat, and after the man died, the doctor informed me that I had broken his pneumonia record, and, in the kindest possible way, accused me of polypharmacy. I was broken-hearted until the autopsy revealed multiple pulmonary abscess, due to prostatic infection.

A case of persistent singultus, in a young sailor, who had temperature without local symptoms. This was before the day of the cystoscope, or applied bacteriology. He died without a diagnosis and with refusal of autopsy.

We called in the coroner; the autopsy revealed cystitis and multiple abscess of both kidneys.

A negro was shot in the abdomen by another negro who found him in bed with his wife. It developed that the man was noted for his sexual excesses. He died of his injuries. The autopsy revealed the blade of a penknife firmly imbedded in the lamboidal suture on the left side and buried between the cerebral convolutions in that portion of the occipital lobe which is supposed to be seat of sexual passion. The blade was encased in a thick sheath of connective tissue, like a scabbard, which must have been there for a long time. Query: was there any relationship between the knife blade and this man's sexual excesses.

An Italian on my tour at St. John's Hospital was admitted in a very sick condition. He talked no English and we were obliged to proceed without a history. His symptoms were those of a general infection with Pfeiffer's Grip bacillus: Sore throat, marked muscular pains, especially the ham-strings, intense headache, some diarrhoea and high temperature. He had a tachycardia, but the cardiac valve sounds were perfectly normal. His blood was cultured, but an accident to the culture nullified the results. Some days after admission he developed a shot-like eruption along the hair line on the forehead and other suspicious regions of his body. These became rapidly pustular and subsequently umbillicated. This eruption was so suspicious as to suggest smallpox. I told my house officer that, in my opinion, the diagnosis lay between smallpox and malignant ulcerative endocarditis, with the rather rare condition of a mural mycosis instead of ulceration on the valve, and the still rarer form of superficial pyaemia.

The Brooklyn Health Department was notified. An expert saw the case and was in doubt. He sent for a New York expert, who also was in doubt, and sent for a second New York expert. This triumvirate finally concluded that it was not smallpox. Despite all this scientific investigation and incidentally such treatment as we could give, the patient died. Autopsy by the coroner, Dr. Wuest. Findings of autopsy: Malignant Ulcerative Endocarditis, Mural Mycosis (The ulcer being in the septum in the left ventricle) Superficial Pyaemia. The deep organs in this case revealed no abscess. This was an extremely rare and interesting case which beautifully illustrates the value of autopsy pictures in clinical medicine.

A colored man on my tour in another hospital, was brought in with a history of chills and fever. He had a tachycardia with no evidence of valve lesion. His blood picture was that of infection, although culture was negative. He was very tender over McBurney's area; and the right rectus showed a fair reflex. Diagnosis of appendicitis. The surgeons refused to operate on the ground that they did not find any appendicitis. The man grew rapidly worse: his abdomen became very tense and he began to show signs of collapse. I drove a small trochar through the abdominal wall laterally in the region of the caput coli and drew off a fairly thick yellowish pus. He was then opened by the surgeon, who found a normal appendix. The autopsy revealed small multiple abscesses in the right psoas muscle in the region of the caput coli, a small quantity of pus in the cul-de-sac and plastic lymph on the spleen and liver. In this case everybody was wrong and everybody was right.

A young Jewish law student was seized in the afternoon with vomiting, abdominal pain, chill and some fever. His druggist friend gave him some medicine and he got better. Several days after he entered St. John's Hospital with a history of a repetition of all of these symptoms. On admission he was respiring rapidly, had a rapid pulse and high temperature. His heart showed no signs of disease. There was an area of dullness over the right lower half of the right lung posteriorly, respiratory and voice sounds very distant. Diagnosis of pleurisy with effusion and possible septic pneumonia. The abdomen was somewhat distended, the right rectus showed a marked reflex and he was very tender over the appendix. Doctor Delatour kindly saw the case and, after some demurrer, removed the appendix under local anaesthesia.

The appendix was clean on the peritoneal surface and bulged with fluid, which proved to be muco-purulent and to contain what morphologically resembled the colon bacillus and a streptococcus. He died in a few days. The autopsy revealed septic pneumonia involving the lower half of the right lung, and a large quantity of turbid serum in the right pleural cavity, which yielded a pure culture of the streptococcus longus.

Europe is still far in the lead in pathology, for the reason that she is still far ahead in her percentage of autopsies. Especially is this true of Germany. But the terrible conditions of war now existing have paralyzed everything for probably years to come; and the writer feels that it is America's duty to continue the progress of medical science by maintaining a persistent effort to increase the standard and percentage of autopsies.

## Religious View of Autopsies.

*Rev. J. L. Belford.*

I am requested to present the religious view of autopsies. So far as I know, there is no doctrine of the Catholic Church hostile to these post-mortem examinations, so long as they are conducted with a lawful motive and in a befitting manner.

There is a deep and widespread prejudice against the autopsy. It rests upon the conviction that the human body is sacred. We have consideration for an old chair or an old couch. Everywhere we find relics which people prize, not for their intrinsic value, but for the associations. It may be a soldier's sword or a baby's shoe. Worthless in itself, it is priceless because it brings back the memory of one who is gone.

Now, if men revere such things, it is not strange that they have a greater reverence for the body of their relative or friend, and they refuse to permit what they regard as a desecration or mutilation. With all due respect to the profession, I believe physicians bring about no small degree of this opposition to autopsies. Some of them are so rough and rude that they antagonize people. Many physicians are known to be materialistic, to whom a human body is nothing but so much tissue. It has been said that Austria and Germany lead the world in the number of autopsies they hold. Perhaps the reason they lead will be found in this fact that materialism and rationalism are so prevalent in those nations.

Those who believe in revealed religion regard the human body as the dwelling and the instrument of a spiritual soul. Death separates soul and body, but it does not render the body profane.

Another cause for the sentiment that prevails against the autopsy is the descriptions given by some novelists and some newspaper men. I remember reading a description so gruesome and horrible that I am sure no reader could forget it or even have anything but a firm determination to oppose such an examination if possible.

Then the environment of an autopsy is repellant and disquieting. Usually it is held in a cellar or in some other out-of-the-way room. The instruments are often soiled and rusty, and the operator is anything but circumspect in his manner and his conduct.

Three autopsies came under my observation very recently. In one case there was an unreasonable delay on the part of the coroner's physician, who left the body in a horrible condition. The result was the determination of that family and all their friends never to allow anyone to go to a hospital, blaming the hospital unjustly for the autopsy, the delay, and the condition of the body.

Another case was that of a child. Her residence was, I think, 148 Jefferson Ave. She fell in the yard of our school, while playing. She did not show signs of any great hurt, but she died suddenly, and an autopsy was held at the residence. The operator went away leaving the top of the skull off, the scalped pulled down over the face, and the trunk open from the throat to the pelvis. Some of the family entering the room were simply horrified, and the description of the scene went all over the neighborhood.

A third autopsy was performed on the body of a young woman who had been drowned. It was done in a dirty garage. The operator smoked while he worked, and his language was unprintable. Some of the organs were thrown upon the oily floor, and others were removed. The body lay there for hours, wide open, until the undertaker sewed it up and made it presentable.

If it were certain that there was a good reason for an autopsy and that it would be performed with the consideration and respect that is due to a man, even though he is a dead man, I am sure it would not be so hard to secure the consent of relatives to have bodies examined after death. You have to contend not with what people know, but with what they fear. If the body were treated with some of the consideration shown to the living, say in the operating-room, many objections would disappear.

So far as religion is concerned, I do not know that it stands in the way of science. On the contrary, the Church has always encouraged science, and endeavored to promote scientific investigation, but she naturally protests against any wanton mutilation of the human body, and against the irreverance of coarse men who refuse to treat that mass of tissue with the respect due to the abode and the instrument of a spiritual soul which God has created and employed to work out his eternal purpose.

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# A FURTHER STUDY OF BONE GRAFTING.

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BONE grafting has become one of the most gratifying and successful operations in all surgery. The most successful method of transplanting bone is well agreed upon among authorities. It is that one should transplant a piece of bone taken from the patient who is to be grafted and from no one else, and that one should have as much periosteum on this graft as possible. If either one of these conditions be omitted, then the graft is liable to be absorbed. If periosteum be on the transplant and, if it be taken from the same individual to be grafted, then one may confidently expect 100 per cent of successes, provided asepsis be maintained.

There have been a number of theories advanced to explain the physiology of the life of a graft, namely those by Axhausen, Macewen and Murphy, but no one of these seems entirely adequate to explain all the phenomena. The author would add the following theory to these: Were the blood supply perfectly restored in the bone of a living graft, then it is evident that the graft would not die and would not become absorbed. But this is not the case as the physical properties of bone prevent absorption of blood sufficient to maintain the life of the bone until the vascular circulation is re-established, consequently, more or less of the bone dies. Undoubtedly many of the bone cells on the surface survive while the deeper ones die. In any case it is a varying condition as to how many of the cells actually survive. The inner layer of the periosteum, the endosteum, and, to a much less if not negligible extent, the lining of the Haversian canals provide the cells for osteogenesis in bone repair, to which may be added the comparatively few bone cells in the graft itself which survive. Of these the periosteum is much the most important, probably doubling the combined powers of all the other elements. This relation McWilliams found to be as follows: every graft (26 in number), made by the author *with* periosteum, lived while of 38 grafts, made *without* periosteum, but 21, or 55 per cent, survived. Of these grafts made *without* perioseum, the new bone must have come either from the endosteum or the lining of the Haversian canals or the surviving cells of the graft itself, or all combined, leaving out of account the surrounding connective tissues. If this be true, then the relative importance of the periosteum, as compared with the combined powers of the endostenm, the lining of the Haversian canals and the surviving bone cells is as 100 to 55. The author has made four human transplantations *without* periosteum, all of which healed by primary union. In not one of these did the graft survive,

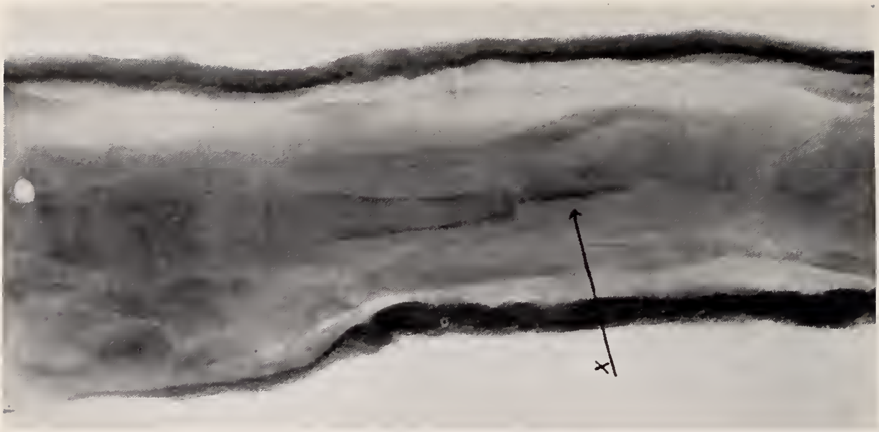


Figure 1.
May 24, 1912. Shows tendency to bowing owing to growth of fibula.
x Graft without periosteum from opposite tibia one week after operation.

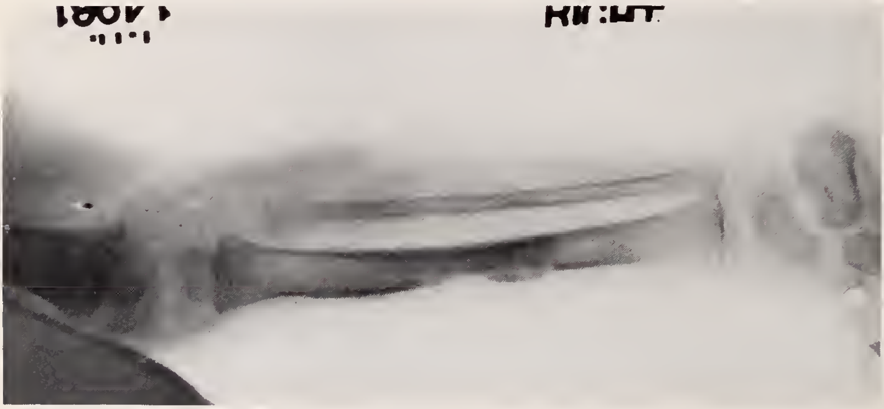


Figure 2.
Defect is filling in, June 28, after one month.

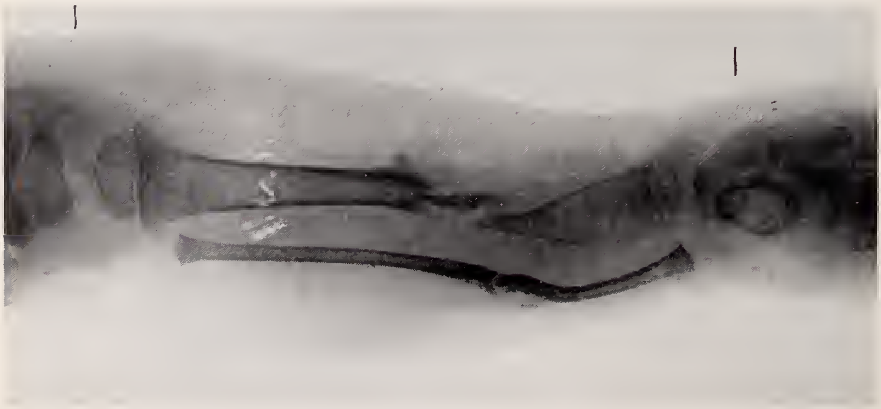


Figure 3.
After six months. Graft is disappearing. Notice tendency to bowing of the leg.

all gradually becoming absorbed by molecular disintegration. In each of these transplants, without periosteum, there was endosteum (three being made with entire sections from ribs and the fourth being taken from a section of the tibia with endosteum on it), together with bone cells and the Haversian canal linings. From this, consequently, we see that the periosteum is a very important structure in osteogenesis and bone graft repair. Of the few reported successful bone transplantations made without periosteum, the influence of the endosteum has not received sufficient attention, although its power of osteogenesis is far inferior to that of the periosteum.

Since we can never tell in advance what particular graft, if made without its periosteum, will live, the teaching is clear to always have periosteum on the graft which will assure a successful issue.

I have summed up in the following table the results obtained in my transplantations:

TABLE 1

| | | *Animal* | *Human* | *Totals* |
|---|---|---|---|---|
| Grafts with periosteum | successful | 24 | 1 | 25 or 96% |
| | unsuccessful | 1 | 0 | 1 " 4% |
| | | | | 26 Total |
| Grafts without periosteum | successful | 21 | 0 | 21 or 55% |
| | unsuccessful | 13 | 4 | 17 " 45% |
| | | | | 38 Total |

From this table we see that only one transplantation out of twenty-six was unsuccessful where the periosteum was more or less on the transplant. That is, 96 per cent were successful, while but 55 per cent were successful of the thirty-eight experiments made without the periosteum. The total number of transplantations was 64, which is a sufficiently large number to gain an accurate knowledge of the probabilities. These sixty-four transplantations were all accompanied by primary union, those which suppurated being entirely rejected. From the fact that practically every case succeeded where periosteum was on the graft while but a trifle over a half succeeded where the grafts were transplanted without their periosteum, I attribute a great function to the periosteum in preserving the life of grafts.

From these experiments we must conclude that both Macewen and Murphy are mistaken in their conception of the lack of any function of the periosteum in maintaining the life of grafts. We must likewise decide that Murphy was wrong when he maintained that contact with living bone is absolutely necessary for the subsequent life of grafts, and that the graft is not osteogenetic but simply osteoconductive of cells from the contracting living bone into the graft itself. This is directly refuted by Experiments 3, 4, 17, 19, 21, 23, 26, 31, 34, 35, 36, 37 and 38, in which each fragment has undoubtedly lived for from six to ten months, although there is no contact between the grafts and living bone. In addition the success of transplantations of entire human metacarpal and phalangeal bones without any bony contact being provided directly refutes the theory that contact is necessary.

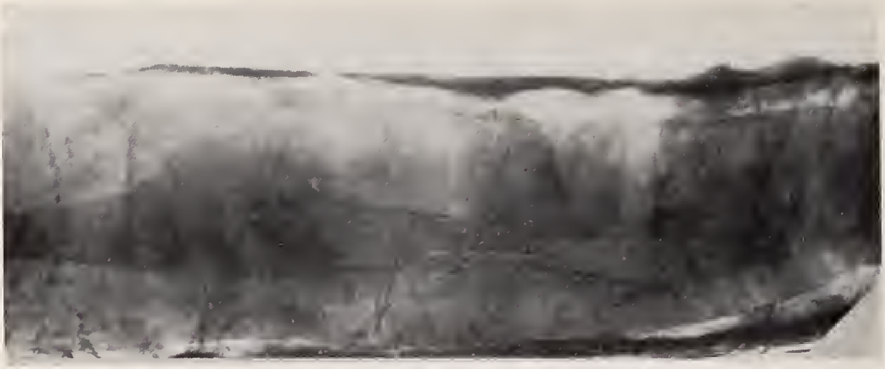


Figure 4.

Nov. 14, 12. Graft with entire periosteum from opposite fibula inserted into each medullary cavity. Wire prevents riding up of graft.

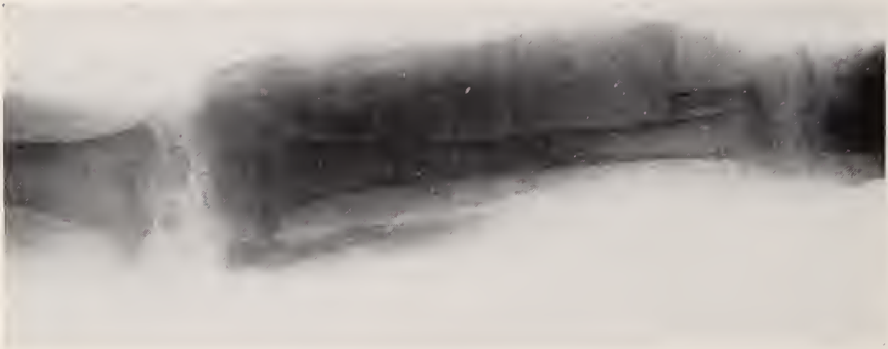


Figure 4.
Showing origin of graft from sound side.

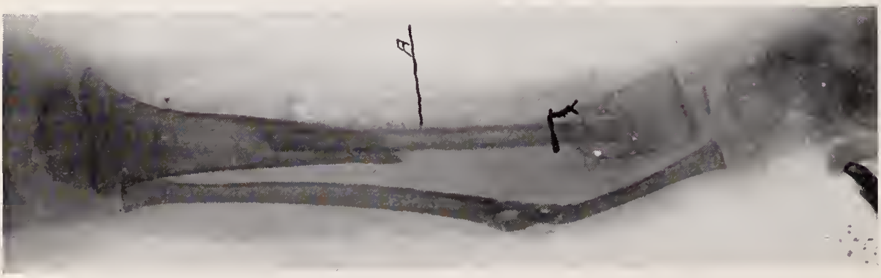


Figure 5
After 63 days. New bone proliferated from periosteum of graft.

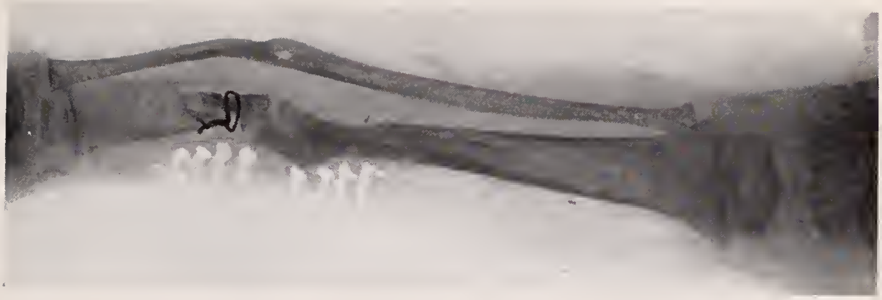


Figure 6.

Seven months after second grafting.
A. Increase in diameter of grafted fibula callus.
B. Fracture. Wire eroding the bone. Removed eighth month.

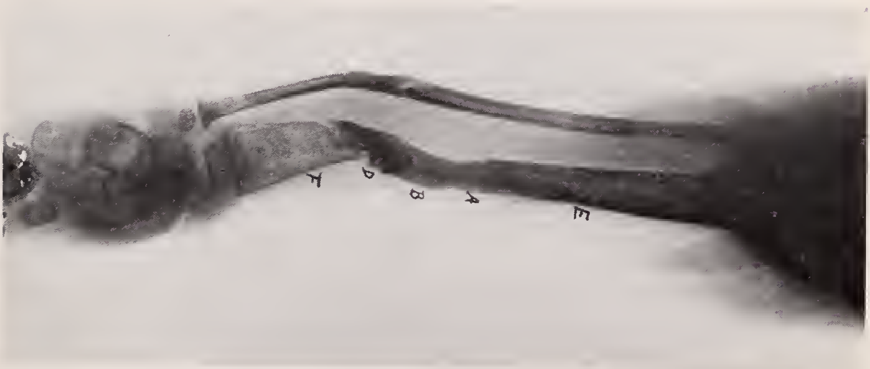


Figure 7.

Four months after removal of wire and eleven months after second grafting. Fracture seems almost healed. Groove caused by wire filled in. Notice tendency to inward bowing.

The conclusions that I have arrived at are as follows:

1. If the periosteum be excised from over an area of bone and a section of bone within this area going into the medullary cavity, be removed (not, however, involving the whole diameter of the shaft) and the endosteum scraped away as well, then it is found that the cavity fills in perfectly with new bone, which of necessity comes from the old bone alone. See Fig. 11.

2. If a section of the whole diameter of a bone be removed, then the bone will regenerate between the ends of the fragments, if the whole or a part of the periosteum be preserved, bridging the defect.

3. If a section of the whole diameter of a bone be removed, very little subsequent filling of this defect by bone will take place if the entire periosteum has been removed from between the ends of the fragments. See Fig. 11.

4. Provided a graft be living and taken from the same patient, its future life depends on an efficient blood-supply, irrespective of the periosteum, or whether it is in contact with living bone or not.

5. Every graft made by the author which was transplanted with some of its covering periosteum lived, except one. Thus, of twenty-six transplantations twenty-five, or 96 per cent survived. Of the one graft which died, it may be said that it was uncertain how much periosteum was on it or whether there was any at all.

6. Of the uncertainty of grafts made without periosteum surviving it may be said that of thirty-eight transplantations made without periosteum, twenty-one, or 55 per cent, lived while seventeen, or

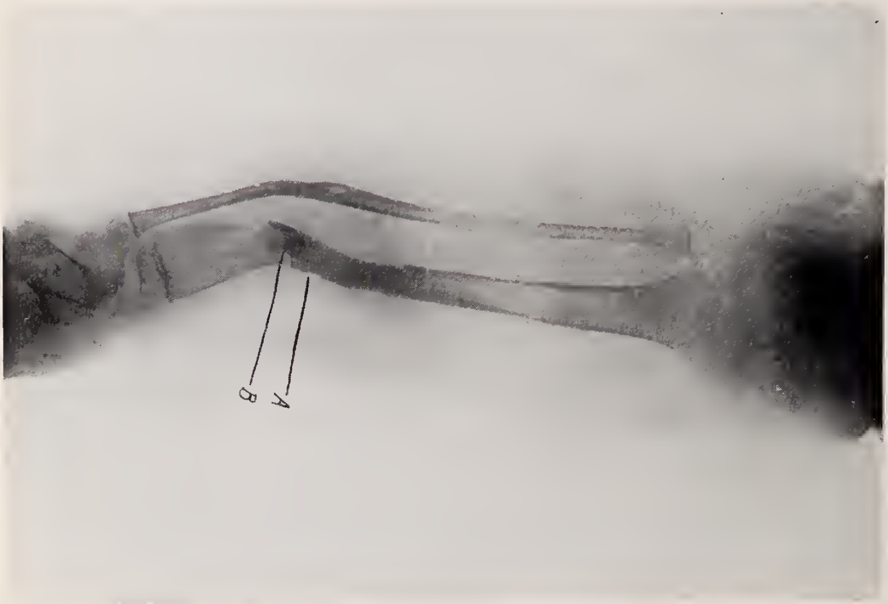


Figure 8.

Taken January 31, 1914. 14 months after second grafting with periosteum. Shows perfect healing of fracture.

A. Site of fracture healed.

B. Junction of graft with lower tibial fragment.

Notice tendency to bowing of leg owing to growth of fibula.

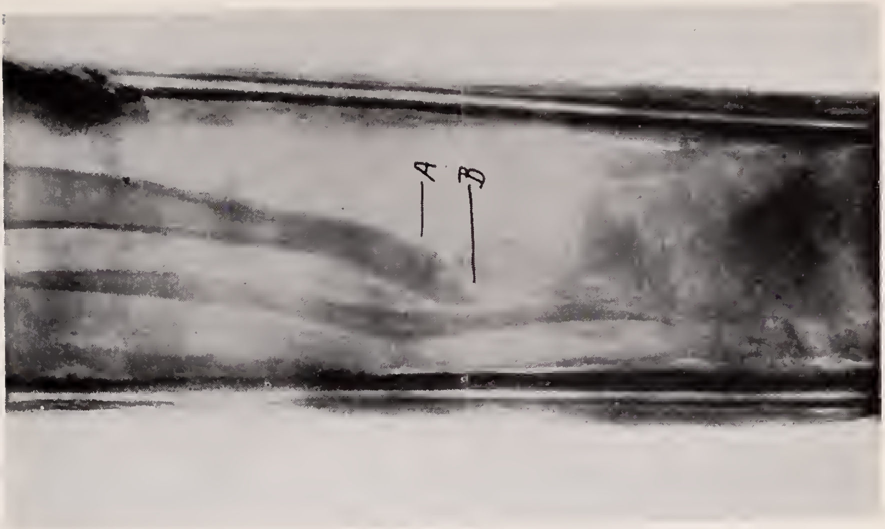
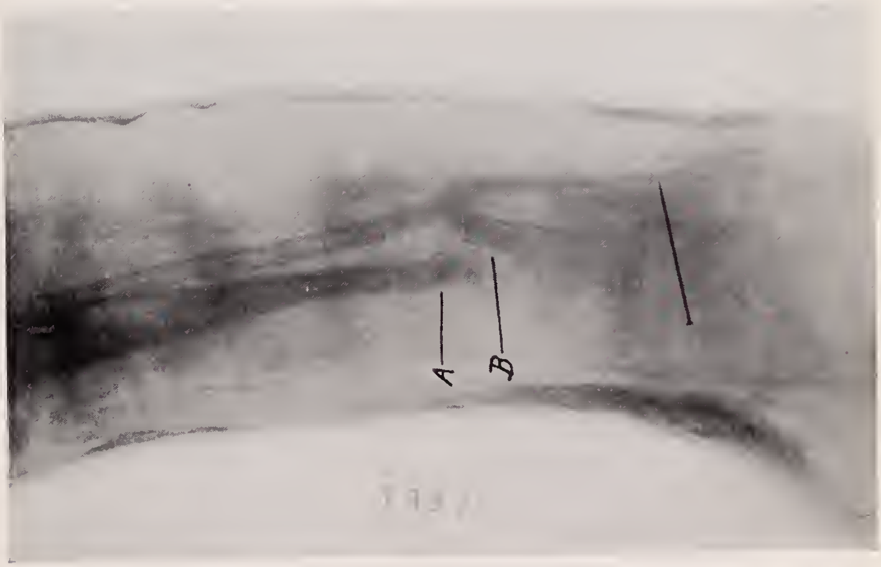


Figure 9.

Taken July 1, 1914, 19 months after second grafting with periosteum. Notice tendency to bowing owing to disproportionate growth of fibula.

A. First fracture healed.
B. Second fracture at junction of graft with lower tibial fragment.



Same—Lateral View.

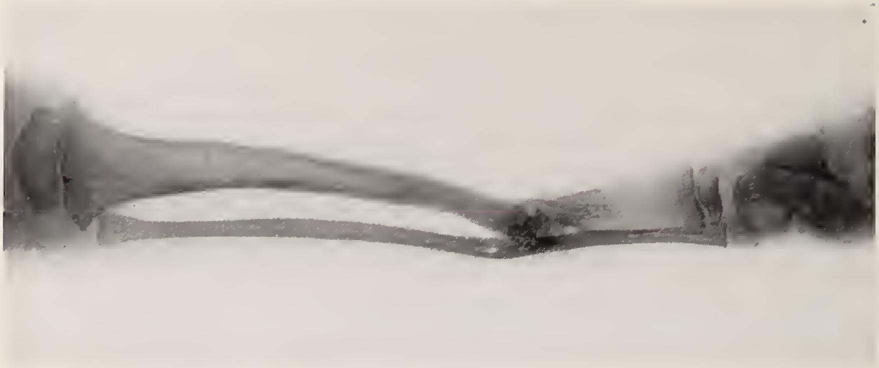


Figure 10.

Taken February 11, 1915, 25 months after second grafting with periosteum.
Leg was straightened owing to brace.
Graft has increased to the size of a normal tibia. Apparently the fracture of the graft has healed.

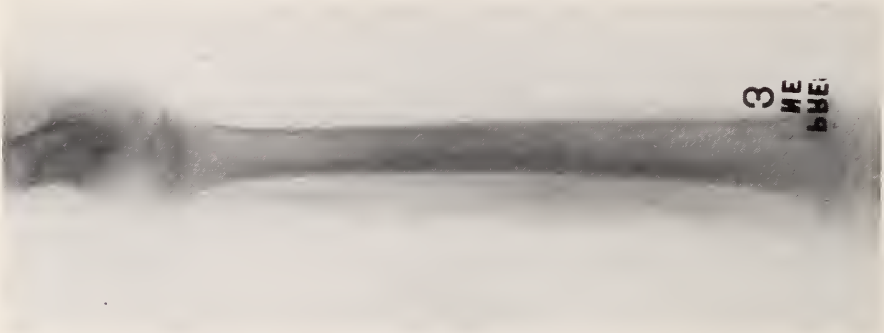


Figure 11.

Defect in tibia from first grafting has healed.
Defect in fibula from second grafting has not healed in owing to removal of periosteum.

44 per cent, died. From this we argue that since one can never know in advance which graft without periosteum will survive it is always wisest to transplant grafts with periosteum.

7. Periosteum when transplanted alone into the soft parts may produce living bone.

8. Contact with living bone is not at all necessary for the subsequent life of grafts as has been maintained by Murphy. My experiments settle this point.

9. From a consideration of all the foregoing facts, the conclusion seems irresistible that bone grafts of whatever size, if one is to be positively sure of their surviving, must be transplanted with as much of their periosteum as is possible; otherwise we may expect the grafts to die in about one-half the transplantations made without periosteum.

10. A bone graft should always be obtained from the individual who is to be grafted. Otherwise the changed serological relations may cause absorption of the graft. Animal bone should never be used nor dead human bone. These simply act as unirritating foreign bodies.

The following case illustrates so well many of the points of bone grafting that it deserves to be reported. I may say that I have performed four human bone transplantations without periosteum and in each instance the graft was absorbed. These were all done immediately after the appearance of Macewen's book, "The Growth of Bone." It is sufficient to say that I have performed my last transplantation without periosteum.

Case 4. This patient was a girl with an ununited birth fracture of both bones of the leg. At the first operation a graft without periosteum was transplanted from the opposite tibia. This graft became absorbed. A second grafting was done and in this the whole diameter of the opposite fibula with its entire periosteum was transplanted. This lived and grew. Within the next two years, two fractures, each of which healed, took place in different parts of the graft and at different times. The child was previously perfectly healthy. It is not often that a birth fracture does not unite and I attribute it in this case to the lack of early immobilization and to too vigorous attempts to overcome the bowing of the leg. It was an instrumental vertex presentation. The fracture was not diagnosed until the fourth week but, strange to say, no immobilization was applied until the seventh month when a roentgenogram was taken in the West which showed non-union of fractures of both the left tibia and fibula. Then a cast was applied for three months, after which, because of a "crooked position" (bowing), the leg was forcibly straightened and casts were used for three more months, at the end of which time the leg was again forcibly straightened and a cast was worn for two months. The patient then came into my hands on March 25, 1912, when she was seventeen years old. A roentgenogram showed ununited fractures of the lower third of the left tibia and fibula, and there was great mobility of the fractured spots. On April 1, 1912, the fracture was cut down upon. No union was found whatsoever, the upper end of the lower fragment projecting upwards in a point. The ends were sawn off and a wire was inserted between them. At the end of three months, there was still no union so on May 24, 1912, a second operation was performed. After sawing off small sections from the extremities of each fragment, a defect of an inch and a half resulted. This made transplantation of bone necessary. A piece of the opposite tibia with its periosteum, 3 inches long, was removed with a chisel (fig. 1). The periosteum was then peeled off the transplant on the assumption that Macewen was correct in his view that the periosteum is unnecessary. One end of the graft was pointed and this was wedged into the medullary cavity of the upper fragment while the lower side of the transplant was fastened to the side of the lower fragment by chromic gut. A plaster splint was applied. Union was by first intention. Fig. 2 shows how quickly the defect in the tibia made by the extraction of the graft is beginning to fill up. Fig. 3 was taken six months after the grafting. It shows that the graft is fast disappearing by an aseptic molecular disintegration of its structure. It is not more than one-quarter of its original size. There seems no way of accounting for the death of the graft except that its cells did not get sufficient blood to keep them alive. Had there been periosteum on the graft it would have lived because the periosteum would either have kept up the nutrition of its cells or else in case the cells of the graft should have died the periosteum would have supplied cells to the graft through which it would have lived.

On Nov. 14, 1912, before the Clinical Congress I did a second grafting operation this time with periosteum. Five inches of the opposite healthy fibula (fig. 4) with its entire encircling periosteum was removed and its ends were inserted into the medullary cavities of the upper and lower fragments, which were reamed out and freshened. The walls of the lower fragment were mere shells. The lower extremity of the graft impinged against the upper surface, as nearly as could be told, of the epiphyseal cartilage. In the medullary cavity of the upper cavity the graft extended fully an inch and a half. To prevent riding up of the graft an encircling wire suture was passed and its ends were twisted. The periosteum was not split at all. A plaster splint was applied. Fig. 5 represents the result after sixty-three days. The wound healed by primary union. From this picture we see that the periosteum of the graft has proliferated new bone, indicated by the shadow on either side of the bone. This shadow is deepest at the upper portion of the graft. There is not the slightest indication of any absorption of the graft. In this picture is also indicated the great tendency to bowing of the leg due to the growth of the fibula. This was a condition which had to be fought throughout the treatment of the whole case. Unfortunately at the fourth month the child kicked off the splint and a picture showed that the graft had become fractured in its lower third. This taught me in future in such operations on the tibia in a child to carry the splint above the knee. In this case the splint went only to the knee. Fig. 6 was taken seven months after the operation. The graft has increased in size generally to the size of a normal tibia. In addition there is a massive callus just above the fracture, which appears to be consolidating nicely. I do not wish to seem dogmatic about where the new bone of the graft came from but I unhesitatingly think that it came either from the periosteum or from the cells in the graft itself and not from the contacting bone of the old fragments, in which case it seems to me that the callus would shade off the further we went from the ends of the old stumps, being the greatest in amount near the old stumps. As a matter of fact the greatest amount of new bone is at the fracture spot in the graft which is at some distance from either end of the old fragments. That not more bone is formed at the lower end of the graft, I attribute to the inhibitory influence of the wire which, as is seen in Fig. 6, is eroding the graft. This latter occurrence is analogous to a patient upon whom Dr. Blake operated (*Surg., Gyn., Obstet.,* April, 1912) in which he passed two encircling wire sutures about three oblique fractures of the femur in an adult. A year later a spontaneous fracture occurred exactly through the line encircled by the wire, which had eroded the bone. Eight months after the grafting I removed this wire in order to prevent the cutting through of the graft by the wire. Fig. 7 was taken four months after the removal of the wire and eleven months after the grafting. The lower fragment of graft has taken on new life, being much increased in size. The furrow made by the wire has become filled up and the fracture seems almost completely healed. Fig. 8 was taken fourteen months after the second grafting (Jan. 31, 1914). It shows perfect healing of the fracture. The constant tendency of the leg to bow inwards is clearly shown. The child was not yet through with her misfortunes for a roentgenogram (Fig. 9) taken July 1, 1914, nineteen months after the second grafting showed that a second fracture had occurred in the graft but at a different place from the first fracture. This time the fractiure was about an inch below the site of the old fracture at the junction of the graft with the lower old stump. How it occurred I do not know. Figs. 10 and 11 were taken Feb. 11, 1915, twenty-five months after the grafting. The child had been kept in a splint all of the time but it seemed hopeless to expect much of a result as non-union appeared imminent. Judge of our surprise and pleasure to find by this picture that there was a large callus at the fracture spot and that motions in the fragments were very slight. Two weeks before, the child had been given a brace which extended about the waist with a joint at the knee and also a foot plate so as to hold the foot in its proper position. The foot had a tendency to flat-foot. The leg is straightening, due to the pressure of the brace. I am led to expect that this child will have a perfect result from this bone grafting. Fig. 11 shows that the defect caused by the removal of the graft from the fibula has not filled in in the slightest degree owing to the fact that the periosteum was removed with the bone. Had I left a small strip of the periosteum, the defect would have filled in perfectly.

# MASSAGE AND ALLIED MEASURES IN THE TREATMENT OF JOINT DISEASES.

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MASSAGE, thermo, hydro and electrotherapies are generally known and to some extent employed by physicians, but details may be overlooked, and the following, therefore, is an effort to emphasize points that are more likely to escape the attention of the busy practitioner. The above systems of treatment should be regarded as adjuncts and part of medical science; they do not take the place of medication, but are valuable assisting agents. Combination treatments, as a rule, make the recovery more rapid and certain, largely removing the necessity of resorting to painful measures.

Infectious diseases with accompanying acute affections of the joints are not treated with massage until the fever subsides. Compresses, fomentations, and radiant heat, however, are valuable in relieving the inflammation and pain and in counteracting permanent injury to the joints. In the very acute and painful period the cold compresses should be changed as soon as warm in order to abstract the excessive heat, but as the inflammation subsides it may be left on continously until dry. The compress is in the last instance wrung fairly dry, and must be covered well with some impervious material such as oilsilk, which in turn is covered with two or four thicknesses of woolflannel. The joints and surrounding parts are thus subjected to a continuous and even heat which causes hyperemia and increased fluxion of blood and lymph. The compress may, in this manner, be made to cool or heat as the case requires. The cooling compress controls the inflammation effectively, but does not, as the icebag, cause entire suspension of vital activities. The paralyzing power of the icebag indicates its dangers and other disadvantages. Even in the application of the compresses care must be taken not to arrest the skin activity in the acute condition. Perspiration may be maintained by hot water drinking, hot water bottles, packs, etc. Salicylic ionization is said to give immediate relief. Remaining exudates of a nonpurulent character are treated with massage, passive and active movements, baking, heating, compresses and high-frequency currents. Chlorine, iodine or salicylic ionization is successfully employed in treating stiff joints from any cause whatever; it dissolves the exudates and softens the ligaments.

Contusions are treated for the purpose of preventing ill aftereffects, for the relief of pain and for the hastening of the recovery. Fomentations or radiant heat twice or three times a day with the protected cold compress in the intervals; if heat and pain is great the compress is changed every 10-15 minutes; as swelling and heat diminish the change should be less frequent. Effleurage is started at once and is given particularly over the centrally-to-the-joint located parts of the limb. Effleurage is slow, sweeping friction, with the whole palm of the hand and is always given toward the centre. The venous blood and lymph is thereby pushed toward the heart leaving a relative vacuum which is immediately filled with fresh blood drawn from the arteries. This press and suction action greatly hastens the circulation without irritation and breaking down of tissue. This explains its resting, soothing and healing qualities.

Gerst has told of a contusion on a leg with mortification and resorption of bone substance that was rapidly healed by effleurage. Deep thumb massage is gradually included as the swelling diminishes and infiltrations are likely to follow. Ionization, the Morton wave current and Darsonvalization may be used with advantage in the acute stage as well as for remaining exudates. The low vacuum, high-frequency current are given in the acute stage, and the high vacuum (White ray) later. Baking should not be used in the acute stage, but is beneficial afterward.

Sprains and dislocations are treated in a similar manner but in dislocations eight to fourteen days' rest is indicated before any passive or active movements are given. Derivative effleurage may be given immediately after the accident.

The harmful action on joints from immobilization in fractures is counteracted by massage on the accessible portion of the limb while the cast or splint is on. Alternate heat and cold may be given at an early time over the fracture and adjoining joints without disturbing the former. There is no reason why the high-frequency currents, as well as ionization should not prove of extraordinary utility in preventing abnormal formations and processes while the immobilization lasts. Joints, which, after the cast is removed, are left in an ankylosed condition with edema, infiltrations and shrunk ligaments, frequently cause permanent disability unless immediate and vigorious measures are instituted. Disintegrating thumb massage is given to the central edge of the edema, and, as the treated parts disappear, more space is included until all is covered. The thumb manipulations must be alternated with effleurage for the purpose of removing the broken-up matter. When force is used it must be preceded and followed by massage (heat is also good) in order to cause absorption of the inflammatory products. If this precaution is not taken the joint may became stiffer than before. The infiltrations and edema should be practically removed before force to any great extent is employed. The force used in stretching adhesions is adapted to the individual and to the case. If force is alternated with circulation promoting measures the ligaments and adhesions are gradually stretched until full mobility is gained. Neglected joints often assume a rheumatic character and in such cases general eliminative and tonic measures (incandescent light sweatbath, autocondensation, etc.), are presecribed in addition to the local treatment. The patient is told to move the joint as much as possible but he needs supervision since he is likely to exercise every joint except the one that needs it. When inflammation from any cause whatever still exists in a joint the extensive use of the same will increase the trouble.

Gonorrhoeal arthritis is relieved by massage, salicylic ionization and various heating measures.

Cases of rheumatoid arthritis benefit by massage, baking, compresses, ionization and vacuum high-frequency currents. General massage, incandescent light sweatbath, antocondensation, sun baths, saltwater baths, exercise tend to restore normal metabolism and to eliminate various waste maters. The abdominal organs and muscles are stimulated and strengthened by massage, exercises, the slowly interrupted low-frequency currents and alternate heats and cold to back and abdomen.

Gout is treated in a similar manner. The uratic deposits around the joints are removed by a combination of massage, heat and lithium, salicylic or thyminic acid ionization.

Tubercular joints are not treated with massage until after the infection is passed. Any treatment producing hyperemia of the parts without spreading the infection is indicated. Baking, Darsonvalization, vein compression and heating compresses are generally employed. The heating compresses should be employed whether other treatments are used or not, because they can be worn continuously night and day. Sunbathing in high altitudes has been extensively tried with the most gratifying results. The sunbath can not always be taken, but artificially produced ultraviolet rays can be had at any time, and constitute an excellent substitute. They are generated by Finsen apparatus or the mercury quartz lamps. Clothing of any kind as well as glass absorb the ultraviolet rays and the skin, therefore, should be exposed and no glass intervene while this treatment is given.

Acute serous synovitis is rapidly removed with effleurage to the whole limb, heating compresses and alternating heat and cold provided rest is secured.

Scars often prevent the proper motion of joints. Massage can do something toward increasing the freedom of motion, but ionization is far more effective. Thiosinamine has a selective action for scar tissue and is often employed as an ointment, but used in ionization its effect is much more powerful. Chlorine ionization also softens scar tissue. The high-frequency vacuum spark is employed for the same purpose. Dupuytren's contraction yields to chlorine ionization. Bathurst tells of a clarionet player who was restored in a month's treatment. Tenosynovitis responds admirably to salicylic ionization.

Falling and weak arches of the feet are now rarely left without special treatment in addition to bandaging and supports. In many cases it is possible to strengthen the arch to such an extent as to remove the necessity for supports. This is done by special exercises, massage, and slowly interrupted currents. The patient is told to use his toes in walking and to press them down frequently even when standing, sitting and lying. He should raise himself on his toes often. Turning the toes and feet inward is a good exercise. In walking he should not turn his toes outward. By alternating the exercises with massage much more certain and rapid results will be gained. The slowly interrupted sinussoidal current may take the place of exercise to a large extent.

None of the above measures will yield expected results unless thoroughly and expertly administered.

Ionization is, as is well known, a process of introducing elements into the tissues by means of the galvanic current. The choice of poles is easily determined by remembering that the positive pole repells positive elements while the negative pole repells negative elements. The bases, being positively charged, are therefore applied on the positive and the acids on the negative pole. The current is applied by metal plates covered with felt and 15-20 layers of absorbent lint or some soft cotton fabric which is soaked in the solution or by bowls containing the desired solution. A ½% solution is generally employed. The pad is firmly and smoothly bandaged on the parts to be treated. The indifferent electrode should be larger but equally well covered and may be soaked in salt solution. The many layers of linen or cotton cloth are necessary to hold the solution and to prevent burning the skin. As oil offers great resistance to the movement of the ions the skin should be thoroughly cleaned immediately before the treatment. Possible injuries to the skin are looked for and covered with collodion or adhesive plaster. The current is turned on very gradually allowing (for joint troubles) as large currents as the patient can bear—50-150 milliamperes—for 30 to 60 minutes. The patient is questioned if the current is evenly distributed; if a strong burning is felt in a small area, the trouble—generally uneven application of the pad or skin abrasion—must be attended to at once. In using bowls of water it is well to remember that considerable irritation on the skin will take place at the line where the limb emerges from the water unless this area is well oiled and protected with many layers of cloth. Three treatments a week are generally indicated.

## GASTRO-JEJUNAL ULCERS.

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WE all agree that chronic gastric and duodenal ulcers are surgical diseases and therefore require surgical treatment. This is true despite the fact that occasionally there is a discouraging persistence of symptoms or a recrudescence of same after surgical intervention. In many of the cases which exhibit a postoperative recurrence of symptoms, the condition is due to the development of a new pathological entity, a gastro-jejunal ulcer; the primary pathological condition having disappeared as a result of operation.

These gastro-jejunal ulcers are fortunately a rare operative sequela. They are curable and in most instances can be prevented.

It is our hope in reporting these cases and devoting some time to the discussion of their etiology, that we may arrive at some conclusion as to the method of guarding against their occurrence.

Case No. 1: John S. Age 32. Policeman. Seen for the first time May, 1911. Fam. His. Negative. Previous His. Denies S. Neisserian Infection 4 yrs. ago. Typhoid Fever 4 yrs. ago.

Pres. His. 6 Mos. before his visit to me he had an attack of acute indigestion, with vomiting and sharp pain in the epigastrium. Was ill for three days. Since this attack he has had indigestion. Pain in epigastrium, dull in character, occurring shortly after meals, relieved by vomiting or the use of alkalies. Gas is constantly being raised from stomach and this is often accompanied by regurgitation of a sour, burning liquid. Constipation is marked. Has lost 30 lbs. in weight.

Examination showed marked dilatation of stomach, splashing easily elicited. Tenderness over right epigastrium. Some tenderness over appendix. Urine exam. neg. except for the presence of an excess of indican. Gastric analysis. Marked hyperacidity, 85. Hyperchlorhydria, 45. X-ray examination showed dilated stomach and gastric stasis; bismuth remained in stomach nine hours after ingestion.

Treatment: Rest. Milk and egg diet. Bismuth and alkalies. Occasional lavage. Improvement not marked so on July 12th, 1911 patient entered Holy Family Hospital. Operation performed July

18th, 1911. A large ulcer of the duodenum was found and on delivering the jejunum out of the abdomen four ulcers were found in the jejunum some distance from the beginning of the jejunum. A posterior no loop gastro-enterostomy was performed, using a Pagenstecher thread for the serous stitch. The inner stitch was of chromic gut. The appendix was found adherent and kinked, so it was removed.

Recovery was uneventful and the patient left the hospital at the expiration of three weeks very well. There was no gastric distress. Soft food was advised and soda bicarb. was to be continued. Six weeks after operation he returned to work. Two weeks after returning to work he was suddenly seized with pain, vomiting and extreme weakness and returned to the Holy Family Hospital. Examination at this time showed distention of the entire abdomen. Marked tenderness over the left epigastric region, and just above the level of the umbilicus and three in. to the left a mass could be felt. Pain was intense and on the left side in region of mass. There was also pain in the lower abdomen. Constipation was severe. Gastric content was markedly hyperacid. Blood count showed 18000 Whites, 82 per cent Poly's.

Operation: Abdomen opened to the inner side of old scar. There was a mass about the size of a lemon behind the meso-colon. The omentum was adherent to the anterior abdominal wall. This was freed and the transverse colon was dissected off the mass which was then seen to involve the left extremity of the gastro-enterostomy. The jejunum was palpated and found adherent to the stomach for some 2 inches. The anterior gastro-enterostomy wound was laid open and there was then seen an ulcer on the posterior-inferior surface of the jejunum ½ in. from the left end of the stoma. The stoma itself was constricted by the inflammatory mass so that it only admitted the end of the middle finger. The proposition certainly staggered us. We felt that the indications were to remove the ulcer which was almost perforated and it was evident that the stoma must be enlarged. What was done is but poorly described in these pictures. The jejunum, meso-colon and stomach beyond the stoma around the ulcer were adherent all together. In excising the ulcer therefore we removed also the adjacent stomach wall, continuous with the gastroenterostomy opening. These corresponding jejunal and stomach walls were sutured together thus closing the posterior plastic gastro-jejunal wound. The jejunum was resutured anteriorly to the stomach where it had been opened to inspect the interior, thus closing the tube. His convalescence from this operation was a very stormy one; his principal difficulty being abdominal distention and extreme constipation. He remained in the hospital for two months and went to his home for a short time. Abdominal distention then returned and with it intense pain over the bladder and very severe constipation. He was then sent to the Kings County Hospital which he entered in March, 1912, eight months after his first operation.

Abdomen more prominent on the left side but was generally distended. X-ray pictures showed a very large gastroenterostomy opening. Stomach emptying within five hours. Bismuth, however, was delayed in the small intestine and did not reach the cecum for twenty-four hours. Bladder was examined because of the intense pain in this region. Nothing abnormal found.

Gastric analysis: Total acidity 16. Free HCl only a trace. Combined HCl 14. Bile present.

Urine showed excess of indican. Wassermann taken at this time was negative.

Operation: Incision was made in lower left rectus.

The small intestine was found everywhere adherent. One loop of ileum proximate to cecum was adherent high up to the transverse colon. This loop was released and the general adhesions left as they showed no kinking of the gut. The gastro-enterostomy was examined and found free from induration. The stoma admitted the ends of two fingers easily. The mesenteric glands were found enlarged and were thought tubercular. Several of these were removed for examination. The abdomen was closed without drainage. The recovery from this was rapid. The bowels moved more readily and the distention disappeared. He left the hospital twenty-one days after operation in very good condition. Glands proved to be non-tubercular hyperplasia.

Present condition, three years after gastro-enterostomy: Has been working since Aug., 1912. He weighs as much as he did before his illness began, and he started his operative career. He has no gastric distress. Appetite is good. Eating causes no discomfort. Vomited once in two years. Eats everything. However, he is somewhat constipated and has pain in the suprapubic region; probably due to some of the adhesions. Headaches frequently, due to an astigmatism; now corrected by glasses.

X-ray: Functionating stoma, stomach empties in six hours.

Gastric analysis shows hypersecretion, hyperacidity and hyperchlorhydria. 15 oz. T.A.80;F.HCl.29. Normal 5 oz.;T.A.50;F.HCl.18. This probably due to faulty diet and to intestinal adhesions.

Case 2. Max S. Age 32. Machine operator.

Admitted Kings County Hospital, March 19th, 1914. Discharged, April 18th, 1914. Family History negative. Past His. operation five months before admission to the Kings County Hospital for gastric ulcer. Was very well for one month after operation. Then he began to suffer pain which was present almost continuously whether food was taken or not. Gas present in stomach constantly. Vomited frequently. Whereas before first operation pain was all on right side, now pain is confined to left side. Was very constipated. Physical examination showed enlargement of postcervical lymphatic glands. Some evidence of tuberculosis of left lung. Abdomen scaphoid. Scar in right upper quadrant. Marked tenderness in left upper quadrant, with positive resistance in this region. Dullness over this possible mass. Inguinal glands enlarged. Gastric analysis shows marked hyperacidity and stasis. Wassermann negative. Sputum negative for Tbc. Blood was found in stools and stomach. X-ray: very small stoma, bismuth remaining in stomach almost entirely for seven hours. Operation, March 28, 1914, K.C.H. On opening the abdomen a mass the size of an orange was found in the lesser omentum involving the stomach and colon (transverse). The meso-colon was incised. The colon dissected free from mass, which was now seen to surround the anterior surface of stomach and jejunum at the gastroenterostomy wound. The efferent jejunum was looped back on and adherent to the afferent jejunum. The mass was opened and found to contain about one dram of pus. After the pus was sponged away the bottom of the cavity could be easily seen. In the line of suture was a piece of linen about 1½ in. in length, a small piece of what was thought to be rubber tissue and a pin point perforation on the jejunal side of the wound. The gastroenterostomy wound was incised and an ulcer here found involving both the stomach and jejunum about the size of a five-cent piece. The ulcer and contiguous wall of both stomach and jejunum were excised. This greatly enlarged the stoma which when first examined barely admitted the tip of the index finger. It was a simple matter to suture the gastric to the jejunal wall and thus complete the operation.

His immediate recovery from the operation was satisfactory, but he is by no means cured, as he still has pain if he does not persist in the use of alkalies or if he eats meat. When he first returned home, regardless of the instructions given to him, he ate everything and I believe there is a return of ulceration at the site of the plastic gastroenterostomy. I do think he will heal this over if he persists in following the direction given. His tuberculosis has apparently extended, the pulmonary signs being now more marked than when he entered the Kings County Hospital.

The first gastro-jejunal ulcer was reported by Braum in 1899. Since then thorough studies and reports of cases have been made, particularly by Patterson of London and Hartman of Paris, so that the reported cases up to 1914 numbered 125. Since then cases have been added by Lelore, DesGouttes, Berard and Hartwell. With these two now reported there are all told 131 cases. It is estimated that this result occurs in about 1.5 per cent of all gastro-enterostomies.

Pathology: The true gastro-jejunal ulcer occurs at the line of anastomosis and is the direct result of some operative misfortune. These ulcers are ragged and irregular and involve the gastric surface or jejunal surface alone or, as is most frequently the case, both the gastric and jejunal. This was the condition in the second case reported by me.

The other variety is the round, punched out, cratering ulcer occurring in the jejunum. This type resembles the ulcers occurring in the stomach and duodenum, of septic or toxic origin. In this class can be placed the first of my cases.

Etiology: In the majority of cases of gastro-jejunal ulcers where gastric analyses have been made before operation there has been found hypersecretion, hyperacidity and particularly hyperchlorhydria. We know that HCl in sufficient strength will produce ulceration in the normal gastric mucosa. It is easily believed then that hyperacidity can produce ulceration in the jejunum, for the jejunum is habituated to the alkaline chyle coming from the duodenum. So also it can readily cause ulceration in the linear scar lining the ostomy opening subjected, as it often is, to the traumatism of all varieties of food stuffs as they pass through it. The toxic action of the HCl injures the mucous membrane. These injured cells of the mucous membranes fall a ready prey to digestive action of the intestinal juices. This destruction due to the HCl does not happen with every gastro-enterostomy for two reasons. After gastro-enterostomy there is a diminished secretion of chlorides. Secondly more or less bile and pancreatic juice enter the stomach through the stoma and there neutralize a great amount of the acid. Anything that tends to increase the secretion of HCl or to diminish the amount of bile and pancreatic juices entering the stomach will nullify one or both of these protective factors; the protective factors being the diminution of chloride secretion and the neutralizing action of the intestinal juices. Thus the toxic action of the HCl destroys the digestive resistance of the mucous membrane. This hypothesis is accepted by most all the authorities as the correct one for the origin of the great majority of gastro-jejunal ulcers.

No gastro-jejunal ulcer has occurred in a case operated upon for gastric carcinoma. In these cases there is usually an achylia. The location of the most of these ulcers is in the efferent line of the jejunum into which the acid stomach content is discharged. Both of these facts strengthen the hyperacidity hypothesis.

A few cases have been reported where the percentage of HCl was low. That however does not prove that hyperacidity did not exist at some previous time. We know that diet and alkalies will greatly reduce the hyperacidity.

Another etiological factor in the formation of these ulcers is circulatory disturbances. Tension on the intestinal loop, a twist in the efferent loop, dense adhesions in the mesentery, irritation of coarse food-stuffs on the suture line, or of a retained or infected suture; a blood clot from puncture with a needle while suturing, the traumatism of clamps too tightly applied; all of these may so alter the blood supply to the membrane that digestion by the intestinal juices easily occurs.

Finally infective processes are the causative factors in the production of certain of these ulcers. The work of Neumann and Rosenow has positively established the septic origin of some of the gastric and duodenal ulcers. Undoubtedly some of the gastro-jejunal ulcers reported were of this type, as where the ulcers were multiple and occurred shortly after the original gastro-enterostomy. Toxic blood conditions, as in burns and uremia, are closely allied to the septic factors and must be added to the already crowded list of causes of gastro-jejunal ulcers.

The ulcers developing at the opening itself require special consideration. They predicate an understanding of the healing process following gastro-jejunostomy. These ulcers must be considered as a consequence of the wound itself. One word as to the healing of the mucosa after a gastro-jejunostomy wound has been sutured. If a button has been used we know that a sloughing of the mucosa takes place and therefore a gastro-jejunal ulcer exists. This ulceration at the slough heals in the normal sequence of events. Some experimenters claim that where an inner mucous stitch is used the mucosa sloughs in a like manner. If these statements are correct every gastro-enterostomy wound heals subsequent to ulceration. As it takes three weeks for the mucosa to cover over these areas of slough a persistence of hyperacidity during this period would readily produce a chronic ulcer. Examination of the line of suture after operation does not prove that this general sloughing at the wound always occurs. Many operators, having examined the wounds at varying times after operation, report continuity of the mucous membrane. Microscopic examination has substantiated this continuity of the mucous membrane and also the absence of the slough. In a case examined three days after a gastro-enterostomy at the Kings County Hospital the mucosa seemed perfectly healed; no slough was evident. The sloughing of the wound edges undoubtedly takes place in the majority of instances but not in all. The occurrence of gastro-jejunal ulcers early after gastro-enterostomy can thus be easily explained when the protective factors are absent, the protective factors being the diminished secretion of chlorides and the entrance of the alkaline intestinal juices into the stomach. A protraction of the stage of ulceration accounts for the partial or complete closure of the stoma. This diminution of the gastro-enterostomy opening from contraction of the scar tissue at the site of sloughing explains also the origin of the late ulcers. The opening contracts, for some time the hypertrophied gastric muscle overcomes the constricted stoma. Later the muscle becomes exhausted and dilatation and stasis supervene. With stagnation of the gastric contents comes hyperacidity. This in turn produces the ulcer.

Symptoms: One group comprises those cases in which ulcer perforates into the general peritoneal cavity. The symptoms are those of rupture of a gastric or duodenal ulcer. The second group includes those in which adhesions prevent rupture into the general cavity. In this class the principal complaint is of pain, coming on after a variable period of more or less relief after the original gastro-enterostomy. The pain of pyloric or duodenal ulcer is to the right side. The pain of a gastro-jejunal ulcer is mostly on the left side of the epigastrium. In both of my cases the pain was originally to the right but moved over to the left when the gastro-jejunal ulcer developed. This pain has no definite relation to food. Vomiting frequently develops. Blood is at times present in the vomitus or stools. Induration, and the existence of a tender mass was present in both of the cases reported tonight.

Gastric analysis shows that hypersecretions, hyperacidity and particularly hyperchlordydia have been present in every case in which a gastric analysis was made. Mortality cases not operated, 100 per cent. Cases operated, 11 per cent. Of the 131 cases I have been able to find only nine occurred after posterior gastro-enterostomies.

Treatment: The treatment of the acute perforating type with general peritonitis is the same as in perforation of the stomach or duodenum. Close the ulcer. This has temporarily saved the lives of two patients. Later, or if possible at the time of closure of the perforation, the gastro-enterostomy opening should be enlarged. It is in this class of cases that as a temporary expedient jejunostomy may be employed after the perforation has been closed. Here, after an acute perforation with general peritonitis, jejunostomy may be the means of sustaining life. In no other time is it indicated in the treatment of gastro-jejunal ulcers. The acute perforating type is always and immediately surgical, for in surgical intervention rests their only hope. The other group, where the ulcer is surrounded by protective adhesions, should only be made surgical after a persistent trial of medical treatment has failed. Several cases have relapsed after surgical treatment which were ultimately relieved by persistent medical treatment. With but very few exceptions all the medical cures have had to resort to surgical help. Because the healing process resulted in conditions such as closure of the stoma, adhesions, etc., which made surgical intervention imperative they had become purely mechanical propositions.

Medical Treatment: Rest. Milk and egg diet. Bismuth and alkalies. Let me express here my preference for large doses of bicarbonate of soda, one or two drams at a dose. If this treatment produces a diminution of the pain, the hypersecretion and the hyperacidity, we should continue for months with the hope of ultimate cure.

Surgical Treatment: Indications for surgical intervention are a persistence of pain, hyperacidity and hypersecretion notwithstanding the medical treatment. Hypersecretion indicates a contraction of the gastro-enterostomy opening; in other words gastric stasis; and demands surgical enlargement of the stoma in order to obtain a permanent cure. Patterson says, "An acid fluid in the stomach in the morning after ten hours abstinence from food is sufficient indication for surgical treatment." I would add to that: if there is pain.

In acute perforation all agree that the perforation should be closed. In the chronic cases each surgeon has his own favorite procedure. Many have performed new gastro-enterostomies. This is easily accomplished in cases in which anterior gastro-enterostomy was the original operation. Others have used Y operations. Patterson recommends a "Y" gastro-enterostomy, implanting the proximal limb of the jejunum into the stomach so that all the alkaline duodenal content will enter directly into the stomach.

Several French authorities advise nerve section to diminish the secretion of HCl, an absurd recommendation if there is gastric stasis due to closure or constriction of the gastro-enterostomy opening.

To us, when the problem presented itself, the indications were plain. Removal of the ulcer and enlargement of the gastro-enterostomy opening. This is what must be done if we hope to relieve our patient. Infolding of the ulcer only adds further obstruction to the already embarrassed opening. In our first case we must admit the problem was most serious. After some consideration the relation of the ulcer to the gastric wall solved the problem. This ulcer occurred in the efferent limb of the jejunum about ½ inch from the stoma and on the posterior inferior surface. In gradually perforating it had fixed this portion of the jejunum to the stomach, so that excision of the ulcer-bearing area with the adherent gastric wall fulfilled all the requirements. It removed the ulcer and at the same time enlarged the gastro-enterostomy opening.

In our second case, that of a true gastro-jejunal ulcer at the line of anastomosis involving gastric and jejunal surfaces, the excision of the ulcer bearing area on both the gastric and the jejunal sides accomplished an equally satisfactory result. We then adopted a plastic gastro-enterostomy and this is the treatment advised by most operators including the Mayos, Moynihan and Hartmann and is the procedure which has given the best results because it meets the requirements; it enlarges the stoma and removes the ulcer. Let us remark here that an absolute essential to the successful surgical treatment of gastro-jejunal ulcers is the preliminary medical treatment. By this we reduce the hyperacidity and diminish the hypersecretion and in this way insure an early and complete healing of the gastro-enterostomy wound. From all this we now come to the most important and valuable deductions of this paper, *i.e.*, the preventative treatment of gastro-jejunal ulcers.

1. Before the gastro-enterostomy: We must promote healing of our gastric and jejunal wounds by reducing the hyperacidity and the hypersecretion. This can be accomplished by rest in bed, milk and egg diet, gastric lavage, alkalies and bismuth; and it should be used before all gastric operations.

2. Technic of Gastro-enterostomy: Avoid methods which always cause sloughing of the mucous membrane, such as buttons.

The posterior no-loop method is undoubtedly the method of choice. Use an inner row of suturing, securing as accurate an apposition of the mucous membrane as possible, expecting by this means to obtain primary union without sloughing and with a minimum scar. This inner stitch is of positive value. Make your gastro-enterostomy opening large and as near the pylorus as is practical. When possible avoid clamps. When clamps are used, don't crush the tissues to strangulation. Asepsis will minimize the danger of silk or linen suture material, though personally I intend to use chromic catgut exclusively.

After completing the anastomosis see to it that the efferent limb of the jejunum is so placed that it runs towards the left. In our second case the efferent limb turned and ran directly back on itself, so that it ran parallel to and immediately in front of the proximal limb. This condition has also been noted in another case examined at a subsequent operation. This kinks the jejunum and causes a jejunal stasis, readily helping the toxic action of the HCl.

3. After treatment of gastro-enterostomies: Lowered acidity means increased rapidity of healing. Therefore keep these patients on a suitable diet for months. Meat is a great stimulant to acidity. Allow them none for six months. Use alkalies to diminish the acidity. Use them not only for a few days after operation, but for months. Explain carefully to the patients that hard, coarse foods improperly masticated will positively injure them. They will, by traumatising the wound.

Finally: Whenever pain occurs after a gastro-enterostomy, particularly if it is on the left side, examine the gastric contents. If you find hypersecretion and hyperacidity treat that patient as a potential gastro-jejunal ulcer.

# The Associated Physicians of Long Island

## MINUTES.

The Fifty-third Regular Meeting of the Associated Physicians of Long Island was held at the Hotel Nassau, Long Beach, L. I., Saturday, October 23rd, 1915, and was attended by about one hundred guests and members and those present were unanimous in the opinion that the meeting was a distinct success from every point of view.

The reading of the minutes of the June Meeting was dispensed with as they had been published in the issue of the Long Island Medical Journal for July, 1915.

The Chairman of the Membership Committee, Doctor Robert Forest Barber, proposed the following names, which had been printed upon the program, for election to membership:

Harry Willard Nichols, 323 Sterling Place, Brooklyn, L. I. C. H., 1897. Proposed by Elias H. Bartley.

Alton Sanford Henderson, Huntington, L. I., N. Y. Hom., 1906. Proposed by John P. Heyen.

Joseph S. Thomas, 259 Amity Street, Flushing, P. & S., N. Y., 1904.

L. L. Cox, Locust Valley, L. I., P. & S., Baltimore, 1887.

James Allen Cooley, 552 Pacific Street, Brooklyn, Cornell, 1908.

Frederick C. Peterson, Smithtown, L. I., Buffalo, 1895. Proposed by James Cole Hancock.

As the rule requiring applicants' names to be printed upon the program of the meeting was a new one and as the following names were received too late for such printing, through no faults of the applicants, Doctor Barber moved that the By-Laws be suspended for ten minutes for the purpose of proposing them. The motion was seconded and was carried unanimously as was necessary for a motion to suspend the By-Laws.

Francis J. Doyle, 151 Hull Street, Brooklyn, L. I. C. H., 1902. Proposed by Charles F. Yerdon.

Delmer Dennis Durgin, Kings Park, L. I., Univ. Vt., 1910. Proposed by Edwin S. Moore.

Aaron J. Rosanoff, Kings Park, L. I., Cornell, 1900.

Isaac J. Furman, Kings Park, L. I., Syracuse, 1906.

William C. Garvin, Kings Park, P. & S., N. Y., 1903.

Charles Gibson McGaffin, Kings Park, L. I., Albany, 1908. Proposed by William Austin Macy.

Walter G. Baetz, 805 Hatch Avenue, Woodhaven, L. I., Medico-Chi., Phila., 1909. Proposed by Ernest K. Tanner.

Otto V. Huffman, 89 Joralemon Street, Brooklyn, P. & S., N. Y., 1903. Proposed by James Cole Hancock.

All the above names were favorably acted upon by the Society and ordered placed upon the membership roll.

Doctor William H. Ross stated that the Publication Committee had nothing special to report but would have a report ready for the Annual Meeting.

Doctor Arthur D. Jaques reported briefly for the Committee on Public Health as follows:

The chairman of the committee has associated himself with a committee composed of men and women from Nassau and Suffolk Counties. The committee has employed an executive secretary, Mr. H. B. Maurer, and under the direction of the committee the secretary is to complete surveys where the same have not been made. He will collect all of the data and with the members of the committee will formulate a law which will be taken to Albany this winter for passage. At the present time our intention is to ask for legislation along the following lines; viz.: That mosquito work be done in each county under the direction of an unpaid commission. That all counties bordering on salt water be included in the measure. That the cost of the mosquito work be collected as a tax on the whole county in the usual manner of collecting taxes. This is a general outline of the work projected. It is anticipated that legislation will be procured so that work can be begun early in the spring of 1916. The mosquito pest of the past year together with the increase of malaria makes it desirable that a law be passed this winter. A further report will be made at the January Meeting.

A. D. Jaques, Chairman.

The President appointed the following committees to report at the Annual Meeting:

Nominating Committee: H. Beeckman Delatour, Arthur H. Terry, Frank T. DeLano.

Auditing Committee: Walter A. Sherwood, William H. Aten, Charles Eastmond.

The following resignations were received and accepted: C. Floyd Haviland, Charles Dalton Cleghorn.

The Scientific Session was opened by Doctor Samuel Lloyd of New York, who read the first paper entitled, "Decapsulation of the

Kidney in Bright's Disease." This paper was a very interesting one and was very interestingly discussed by Doctors Edward E. Cornwall, Dudley D. Roberts and Joshua M. VanCott. The second paper on the program was presented by Doctor Frank S. Child of Port Jefferson and was entitled, "The Use of Vaccines in Chronic Purulent Discharges." This paper was also of distinct interest in ably bringing forward a subject that is becoming daily more and more important to the Medical Profession. The paper was discussed by Doctors Joshua M. VanCott, Henry P. DeForest and Walter Truslow.

The usual dinner followed the Scientific Session and the Entertainment Committee received just praise for the way this number on the program was rendered.

James Cole Hancock, Secretary.

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## RADIUM IN NON-MALIGNANT CONDITIONS.*

Walter B. Chase, M. D.

Brooklyn-New York.

THE quite common belief that the usefulness of radium is limited to malignant conditions is not based on facts or experience; on the contrary it is an unsettled problem whether or not its larger applicability may be in benign ailments. While the general law of its use in non-malignant diseases is similar, in point of application the technique is quite different. This diversity is seen in smaller doses and usually in shorter period of application; though exceptions are found in treating large fibromata and tubercular glands.

Its applicability is established by recognized authority in tubercular lymphangitis, polypoid endometritis, hemorrhagica metropathia, goitre, lupus, urethral caruncle, keloids, and a variety of rheumatic and rheumatoid involvements, and in local inflammatory infections. As typical of its usefulness I have selected three cases of diverse pathogenesis, in non-malignant conditions, compiled from the official reports of my work during July, August and September, 1915, at the Norwegian Hospital in the service of Drs. Delatour, Skelton and Graham. Most of this is copied *verbatim*.

Case 1: J. L., aged 21, maidservant at the Norwegian Hospital. Previous history good, only sickness being influenza in February, 1913. She was operated upon for cervical adenitis, left side, May 29, 1914, by Dr. Delatour. At this date, July 9, 1915, there remained a discharging sinus, left side of neck, leading upwards and inwards for two inches. On August 28, 1914, she was anesthetized and the sinus thoroughly curetted by Dr. Skelton, but nevertheless the discharge persisted. Between August 14, 1914, and July, 1915, this sinus was curetted at least twice without an anesthetic. Early in July, 1915, Dr. Graham filled the sinus with carbolic acid without result. On July 9, 1915, I began radium treatment; twenty-five mgms. being used as follows: a tube containing ten mgms. was passed directly into the sinus, and fifteen mgms. were applied to the skin over the sinus, thereby producing "cross fire." On July 13, the discharge was greatly diminished and on July 16, healing had taken place. On August 10, the patient sat in a draft of cold air. This was followed by slight discharge at site of former sinus. August 13, fifteen mgms. of radium were applied for fifteen minutes over the line of sinus. August 15, sinus healed. September 3, sinus still closed. Same conditions present on presentation of patient at Brooklyn Surgical Society, October 7.

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* Read before the Brooklyn Surgical Society, October 7, 1915.

COMMENT: Tubercular glands are susceptible to radium rays providing caseation is not present—and its use by avoiding excision adds to the cosmetic results. In lymphadenoma, confined to small superficial areas, disappearance is frequently brought about by radium.

CASE 2. Mrs. J. M., aged 40. Metrorrhagia. Patient very pale, complains of weakness, headache, and backache. Admitted to Norwegian Hospital, July 20, 1915. History shows she had been bleeding for one year, and for four months before admission it had been practically constant. On admission she was markedly exsanguinated, heart sounds weak, respiration 25, and pulse, 80 to 90. Otherwise normal. Hemoglobin 40 per cent. Pelvic examination revealed a moderately enlarged prolapsed uterus and first degree retroversion. Diagnosis: Polypoid endometritis. July 21 to 24, severe uterine hemorrhage, so marked as to require vaginal packing to control it. July 25, packing removed and twenty-five mmgs. of radium introduced into the cervical canal, which was removed after thirty-three minutes. Sensation of numbness in lower abdomen during the application of radium. July 26, considerable bloody vaginal discharge. July 31, enough discharge to cause spotting. August 1 to 21, no bleeding. August 22, slight discharge. August 23, bleeding stopped. August 24, discharged to return for observation on request. General condition improved, hemoglobin 70 per cent. The patient began to feel better and increase in strength from the very date she was given radium. Up to October 7, she had not returned to the hospital.

COMMENT: The extreme weakness of this patient forbade any heroic measures, and even curettage (much less hysterectomy) was contraindicated. The reason why a larger quantity of radium was not inserted arose from the extreme weakness which forbade any effort at cervical dilatation. In fact she passed into a condition of syncope at the time it was inserted. Her failure to return to the hospital gives credence to the belief her menorrhagia was overcome.

CASE 3: A. C., aged 32, longshoreman. Service of Drs. Delatour and Graham. Admitted to Norweigan Hospital, May 27, 1915, with compound fracture of both bones of left leg, just above ankle. On June 7, fracture was reduced under anesthesia; plaster cast was applied with opening over ulcerating area near ankle to permit of dressing. There were three ulcerating sinuses at points of fracture leading down to bone. Over the anterior portion was an area of denuded periosteum five and one-half inches long, of varying width. The discharge was profuse and the patient weak and exhausted. July 7, twenty-five mgms. of radium in three separate tubes was introduced into the sinuses, remaining for fifteen minutes. Immediately after this radiation, Dr. Graham removed about one inch of the upper fragment of the tibia which was protruding at the ankle. July 10, fifteen mgms. of radium applied to the sinuses for fifteen minutes. For one-half hour patient experienced sensation of numbness from the knee down. July 12, discharge decidedly lessened.

July 14, wound granulating rapidly. Fifteen mgms. applied to sinuses for fifteen minutes. July 20, sinuses closing up rapidly, and patient discharged from hospital, to return from time to time for observation and treatment. Subsequent history. Leg dressed at Hospital, July 24, 26, and 31. There was apparently firm union at point of fracture and the granulation in the sinuses had almost reached the skin level. Patient directed not to place any weight on this foot. August 2, nothwithstanding orders to the contrary, the patient appeared at Dr. Chase's office with crutches but bearing most of weight on injured leg. Dressed by Dr. Chase. August 7, patient came to Dr. Chase's office using crutches for support of leg. Foot moderately swollen and tender and on its dorsal aspect there was a pin point perforation of the skin discharging sero-purulent fluid. Twenty-five mgms. of radium was applied for one-half hour over the anterior aspect of foot. August 9, 13 and 17, leg dressed at Norwegian Hospital. Sinuses on dorsal aspect of foot healed over, but entire foot still quite swollen and of purplish tinge. September 6, redressed at Norwegian Hospital, swelling of foot greatly diminished. The condition October 7, when presented to the Brooklyn Surgical Society—save for a superficial ulcer over instep, was substantially as last described.

COMMENT: Notwithstanding the forbidden and reckless use of the leg the results of this case give hope as to the future usefulness of the leg, and go to establish the efficacy of radium in local inflammatory infections, notably of the streptococcus variety. Radium does not act as a germicide, but by some occult selective influence, its modus operandi being obscure. The literature of the treatment of these non-malignant inflammatory infections by radium is meagre.

Along this line Bissell, *Medical Record,* July 19, 1915, records results probably unequalled by any previous writer—in fact, these results of its use mark a new departure in the treatment of local infections and of blood dyscrasias; notably in pernicious anemia and in the persistent anemia following surgical injuries. This future field of radium therapy will be watched with interest by the surgical world as it opens new possibilities of dealing successfully with these difficult and grave problems.

# Medical Society of the County of Kings

## MONTHLY BULLETIN TO MEMBERS

OCTOBER AND NOVEMBER, 1915

### MEDICAL SOCIETY OF THE COUNTY OF KINGS

### STATED MEETING, OCT. 19, 1915.

The President, Dr. Russell S. Fowler, in the chair. There were approximately 300 present. The meeting was called to order at 8:35 p. m., and the minutes of the previous meeting were read and approved.

*Report of Council.*

The Council reported favorably upon the following applications for membership:

Mark Gordon, 1076 Eastern Parkway; Baltimore, 1900; proposed by S. J. MacNamara, seconded by Membership Committee; Mar., '15.
Charles H. Tag, 284 Jefferson Ave.; L. I. C. H., 1898; proposed by S. J. MacNamara; seconded by Membership Committee; June, '15.
Frank C. Vause, 381 Franklin Ave.; L. I. C. H., 1910; proposed by C. F. Pabst; seconded by Membership Committee; June, '15.
Harry W. Vinicombe, 439 State St.; P. & S., Balt., 1912; proposed by C. B. Pabst; seconded by Membership Committee; June, '15.

*Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:
James Bernstein, 4503 13th Ave.; L. I. C. H., 1911; proposed by C. F. Pabst; seconded by Membership Committee; May, '15.
Harry M. Greenwald, 303 Ditmas Ave.; Univ. &. Bell., 1910; proposed by J. P. Pendleton; seconded by Membership Committee; Mar., '15.
Walter W. Lowell, 432 Enfield St.; Cornell, 1911; proposed by T. C. Takami; seconded by S. J. MacNamara; Apr., '15.
Aaron Roth, 1133 Eastern Parkway; Univ. & Bell., 1908; proposed by N. H. Rachlin; seconded by S. Shaftel; Mar., '15.
Charles E. Rynd, 533 Ocean Ave.; Johns Hopkins, 1911; proposed by L. J. J. Commiskey; seconded by F. A. Prendergast; Apr., '15.
Julius Schlein, 382 Union St.; L. I. C. H., 1906; proposed by J. J. Sheehey; seconded by Membership Committee; Feb., '15.
Jacob Schwartz, 604 Stone Ave.; L. I. C. H., 1911; proposed by J. P. Pendleton; seconded by Membership Committee; Mar., '15.
Emory M. Wadsworth, 103 McDonough St.; Buffalo, 1898; proposed by S. H. Lutz; seconded by Membership Committee; May, '15.

*Applications for Membership.*

Application for membership were received from the following:
John J. Colgan, 191 Nassau St.; L. I. C. H., 1882; proposed by S. J. MacNamara; seconded by Membership Committee Oct., '15.
Harriet W. Hale, 306 Decatur St.; N. Y. M. Coll., 1896; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.
John C. Hamilton, 6120 20th Ave.; Vanderbilt Univ., 1903; proposed by S. J. Post; seconded by Membership Committee; Oct., '15.
Thomas U. Joyce, 700 Union St.; L. I. C. H., 1881; proposed by S. J. MacNamara; seconded by membership Committee; Oct. '15.
Patrick J. Kennedy, 1766 W. 8th. St.; Queen's Univ., 1911; proposed by S. J. Post; seconded by Membership Committee; Oct. '15.
Johann W. Mock, 328 Central Ave.; Univ. Kiel, 1901; proposed by C. Mueller; seconded by G. Buttschardt; Oct., '15.
George B. Reitz, 171 Sands St.; L. I. C. H., 1913; proposed by T. B. Hegeman; seconded by A. J. Salmon; Oct., '15.
Wilhelm E. Stern, 130 Ashford St.; L. I. C. H., 1909; proposed by F. J. Burger; seconded by Membership Committee; Oct., '15.
Chester T. Stone. 62 Pierrepont St.; L. I. C. H., 1915; proposed by L. F. Warren; seconded by A. Murray; Oct., '15.
Binford Throne, 2 Macon St.; Univ. Nashville, 1899; proposed by S. J. MacNamara; seconded by Membership Committee; Oct., '15.
Walter E. Vogt, 191, St. Nicholas Ave.; Cornell, 1903; proposed by W. Pfeiffer; seconded by R. S. Fowler; Oct., '15.

John E. Wade, 908 Greene Ave.; Univ. N. Y., 1871; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.

### *Scientific Session.*

Paper: "Hydrotherapy in America." (Illustrated by lantern slides.)
By William G. Russell, M.D.,
of Philadelphia.

Paper: "A New Method of Vaccination."
By LeGrand Kerr, M.D.

Paper: "Recent Advances in the Treatment of Cancer." (Illustrated by lantern slides.)
By Isaac Levin, M.D.,
of Manhattan.

Meeting adjourned at 10:45 p.m.

Burton Harris,
*Secretary.*

## STATED MEETING, NOV. 16th, 1915.

The President, Dr. Russell S. Fowler, in the chair. The meeting was called to order at 8:45 p.m., and the minutes of the previous meeting were read and approved.

The proposed change in the by-laws, making section 4, chapter 1, to read as follows, was read to the Socity and to be voted on at the December meeting.

Sec. 4. "Stated meetings shall be held on the third Tuesday of each month, except in the months of June, July, August and September, when there shall be no regular meeting—that in December shall be the annual meeting. Of these meetings notices shall be given to all honorary, corresponding and resident members in good standing.

### *Report of Council.*

The Council reported favorably upon the following applications for membership:

John J. Colgan, 191 Nassau St.; L. I. C. H., 1882; proposed by S. J. MacNamara; seconded by Membership Committee; Oct., '15.

James T. Gallagher, 449 Lafayette Ave.; P. & S., N. Y., 1892; proposed by S. J. MacNamara; seconded by Membership Committee; June, '15.

Harriet W. Hale, 306 Decatur St.; N. Y. M. Coll., 1896; proposed by F. W. Bradner; seconded by Membership Committee; Oct., '15.

William Herbert, 1240 Bushwick Ave.; L. I. C. H., 1909; proposed by S. H. Lutz; seconded by Membership Committee; June, 1915.

Thomas U. Joyce, 700 Union St.; L. I. C. H., 1881; proposed by S. J. MacNamara; seconded by Membership Committee; Oct., 1915.

Patrick J. Kennedy, 1766 W. 8th St.; Queen's Univ., 1911; proposed by S. J. Post; seconded by Membership Committee; Oct. '15.

Johann W. Mock, 328 Central Ave.; Univ. Kiel, 1901; proposed by C. Mueller; seconded by G. Buttschardt; Oct. '15.

Chester T. Stone, 62 Pierrepont St.; L. I. C. H., 1915; proposed by L. F. Warren; seconded by A. Murray; Oct., '15.

Binford Throne, 162 Halsey St.; Univ. Nashville, 1899; proposed by S. J. MacNamara; seconded by Membership Committee; Oct., 1915.

### *Election of Members.*

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Charles H. Tag, 284 Jefferson Ave.; L. I. C. H., 1898; proposed by S. J. MacNamara; seconded by Membership Committee; June, '15.

Frank C. Vause, 381 Franklin Ave.; L. I. C. H., 1910; proposed by C. F. Pabst; seconded by Membership Committee; June, '15.

Harry W. Vinicombe, 439 State St.; P. & S., Balt., 1912; proposed by C. F. Pabst; seconded by Membership Committee; June, '15.

### *Application for Membership.*

Applications for membership were received from the following:

H. W. Mayes, 6th Ave. and Berkeley Place; Cornell, 1912; proposed by R. Durham; seconded by H. K. Bell; Nov., '15.

### *Scientific Session.*

Paper: "Some Clinical and Anatomical Data bearing upon the Eccentricities of the Pyloric Sphincter."
By Edward Martin, M.D.,
Prof. of Surgery, Univ. of Penn.

A motion of thanks was presented to Doctor Martin by Dr. William Francis Campbell and carried with a rising vote.

### *Nominations.*

Nominations for officers and delegates for the ensuing year were made as follows:

Dr. Russel S. Fowler, nominated to succeed himself, declined the nomination.

For President—Ralph H. Pomeroy.

For Vice President—Albert M. Judd; H. Beeckman Delatour.

For Secretary—Burton Harris (name withdrawn); Chas. E. Scofield; Robert L. Moorhead.

For Asso. Secretary—Lewis P. Addoms; William A. Gillen.

For Treasurer—Stephen H. Lutz; John A. Lee (nomination declined).

For Asso. Treasurer—Robert L. Moorhead.

For Directing Librarian—Burton Harris.

For Trustee—Russell S. Fowler.

For Five Censors—Warren L. Duffield, John E. Jennings, F. C. Holden, Wm. F. Koerner, Geo. D. Hamlin, Siegfried Block, S. M. Strong, John G. Williams, Geo. H. Reichers, Ralph M. Beach, Frank H. Knight, Chas. Eastmond, N. P. Rathbun.

For eleven Delegates to the State Society, 1916-17—O. A. Gordon, Cassius Watson, J. W. Fleming, Wm. C. Woolsey, Paul M. Pilcher, E. A. Griffin, John A. Lee, O. Paul Humpstone, E. H. Fiske, R. S. Fowler, Wm. Cruikshank, W. A. Sherwood, John E. Jennings.

A motion was made and carried that the alternates be appointed by the Council.

Meeting adjourned at 10:20 p.m.

Chas. E. Scofield,
Asso. Secretary.

# EDITORIAL

## TYPHOID VACCINATION.

WHETHER subsequent investigation will confirm it or not, the impression is that the incidence of typhoid fever, at least in the Borough of Brooklyn, seems greater this year than last and, if individual experience can be trusted, the proportion of virulent cases seems unusually large. There have been one or two considerable localized outbreaks directly traceable to infected food, but a large percentage of the cases is of obscure origin. A very few have occurred in patients previously immunized. This fact in itself is enough to bring into prominence the question of immunization against typhoid, first, because general experience seems to show that the method does immunize and, second, why patients properly immunized should develop the disease. Any instances likely to cast doubt upon the efficacy of protective vaccination are bound to be seized upon by that portion of the public that is always opposed to measures of precaution and for that reason too great care cannot be exercised in investigating the reasons for apparent failure of the measure. Then too, the apparent increase in the number of reported cases offers the strongest of arguments for increased diligence in preventive measures. In spite of the insistence of the Health Department and its laudable efforts to popularize typhoid vaccination, it is evident that profession and public alike have failed to grasp the importance of this prophylactic measure. In point of fact, repeated experience has demonstrated how unwilling the average patient is to submit to it. There seems to be a generally accepted belief that the method is painful and prolonged and that the probable chance of contracting typhoid is so remote that the patient would rather take the risk than submit to the precaution. When it becomes generally known that occasional immunized patients have developed the disease, the difficulty of persuading reluctant patients to submit will be manifestly increased. In regard to immunization failures, it may be asserted that hitherto a fixed rule has been followed. In each instance ½ cc. of the standard preparation has been given at the first dose, 1cc. at the second and 1 cc. at the third. Apparently no sufficient investigations have been conducted to determine whether this is adequate in every instance. It may be that there are patients in whom even partial immunity cannot be induced by less than six or seven doses. It is by no means improbable that there are those in whom artificially conferred immunity is of the briefest duration and it is perfectly evident that the longest period does not exceed three years, if the persistence of a positive Widal may be taken as an index. There is some question whether all commercial grades of typhoid vaccine are equally potent and whether some may not be quite valueless by reason of being subjected to too great heat in the process of sterilization. It is reasonable to assume that the same variations of susceptibility obtain for typhoid vaccination as for bovine vaccine. The genuine value of the latter is only questioned by a comparatively few chronic antagonists, whose point of view is purely selfish and, in spite of its failure to induce universal immunity, its positive efficiency is generally accepted. Could typhoid immunization be insisted upon, the disease would be rapidly stamped out and it is the plain duty of every physician not merely to accede to a request for vaccinations or to express a mild approbation of the method, but to strongly insist that all his patients shall be vaccinated. Failure to exert every reasonable effort in this direction is failure to perform one's full duty to the public. H. G. W.

## "THE SNARE OF THE FOWLER."

### IMPROVED METHODS

### VAST EXPERIENCE, NATURAL ABILITY AND ADEQUATE EQUIPMENT

Science is on the wing. Treatments used years ago are back numbers now. To be a TOP-NOTCH Specialist requires not only skill and energy, but capital. The public is not satisfied with the doctor who sticks in the OLD RUT. I am prepared to give my patients the benefit of all the great discoveries as soon as they are perfected. People come to me because they read my STRAIGHTFORWARD announcements or because I have cured some of their friends.

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No man is too poor to receive my best efforts; no man is so rich that he can procure better service than I am qualified to give. I have one of the best equipped offices in the South.

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I successfully treat diseases of a nature about which most people dislike to consult their family doctor. All treatment confidential. Eruptions or contracted troubles cured. Permanent results. I also treat such diseases as **Blood Poison, Nervous Decline, Stricture, Prostatic Troubles, Bladder and Kidney Affections, all Stomach and Liver Troubles, Rheumatism, Piles, Chronic Diseases of men and women.** Everything strictly confidential. Consultations free. Call or write. Hours: 9 a.m., to 7 p.m.; Sunday, 10 to 2 only.

The foregoing, tastefully embellished with the portrait of the modest advertiser, is culled from a daily paper widely and favorably known throughout the Southern States. Possibly the exotic quality that it exhibits is the result of climatic conditions, but whatever the source from which it sprang we must confess that we have rarely met a choicer gem. Its engaging frankness, its firm yet modest tone and above all the portrait which we dare not publish, mark it for a model of its kind. That little point about the office and those certificates and diplomas are material that should appeal to every thoughtful physician who is wondering how he can best make his modest merits known. Could every quack exhibit the same capacity for successful advertising there would be no need for societies on medical economics. H. G. W.

## A NEW COMMANDMENT.

THE NEW YORK TIMES has discovered the American College of Surgeons and quotes as an exciting bit a portion of its pledge to avoid the sins of selfishness, unwarranted publicity, dishonest money seeking and commercialism; and those other obligations which brand fee splitting as a despicable practice and encourage the education of the public to the value of the diagnostic services of the family physician. It would do no harm for every physician to read and ponder and memorize that portion of the obligation, which is as follows:

"I pledge myself, as far as I am able, to avoid the sins of selfishness; to shun unwarranted publicity, dishonest money seeking, and commercialism, as disgraceful to our profession; to refuse utterly all secret money trades with consultants and practitioners; to teach the patient his financial duty to the physician, and to urge the practitioner to obtain his reward from the patient openly; to make my fees commensurate with the service rendered and with the patient's rights; and to avoid discrediting my associates by taking unwarranted compensation."

Some of us have a framed illuminated copy of the Hippocratic Oath hung up in our offices. We might never have known what it was but for the enterprise of a patent medicine house. Should we have lapsed into the habit of regarding it as an archaic curiosity, let us take it more seriously to heart and add to it this thoroughly sound teaching of the American College of Surgeons. H. G. W.

# Obituaries

DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

## GEORGE JACOB DIRKES, M.D.

Dr. Dirkes was born in Brooklyn in 1867, where he died on July 18, 1915. He was educated in the schools of Brooklyn and the College of Physicians and Surgeons of New York, where he received his degree in 1890. He practiced medicine in this city during his professional life, and for a number of years was physician to the Brooklyn and E. D. Hospital, a member of the Medical Society, County of Kings, from 1891-1915. He is survived by his widow, Harriet E., and two daughters, Dorothy and Marjorie Dirkes.

W. S., Sr.

## HENRY OTTO HOFFMANN, M.D.

Dr. Hoffmann was born in Kur Hessen, Germany, in 1838, and died in Brooklyn, N. Y., June 24, 1915. He was educated at the University of Würzburg, receiving his medical degree in 1872. For many years he practiced medicine in this city. A member of the Medical Society, County of Kings, from 1895-1901. Associated Physicians of Long Island, 1909-1915. W. S., Sr.

## JOSEPH MEYER, M.D.

Dr. Meyer was born in 1855 and died at Woodhaven, L. I., August 15, 1915. He was a graduate of the College of Physicians and Surgeons of New York in the class of 1877. For a number of years he was in practice in this city.

A member of the Medical Society, County of Kings, from 1879-'86, and the Associated Physicians of Long Island from 1909-'15.

He is survived by his widow, Marie Meyer, "nee Goetze," and six children, Albert E. Meyer, Mrs. Michael Donovan, Mrs. F. Schmidt, Miss Lulu Meyer, Miss Tillie Meyer and Walter Meyer.

W. S., Sr.

## JOB CORBIN, M.D.

Dr. Corbin was born in South Hero, Vermont, on November 23, 1834, and died in Brooklyn, N. Y., June 14, 1915. He was educated at the University of Vermont, in which institution he received his medical degree in 1859.

His father was David Corbin and his mother, Rebecca Atkins, both of Vermont. In May, 1866, he was married to Marie L. Weaver, of New York City. The following children were born of this union: Maria L., David, Josephine R., Irving, Edna, Warren and Victorine.

Dr. Corbin served as interne in the Colored Home, New York City, Kings County Hospital and Assist. Surg., U. S. Navy, May, 1861-May, 1867.

He was a member of the Medical Society, County of Kings, from 1869-88. W. S., Sr.

## GEORGE PROSSER GRIFFING, M.D.

Dr. Griffing was born in the Greenpoint section of our city, April 9th, 1852, and died at South Jamesport, L. I., May 5, 1915. He was educated in the District Schools and Franklinville Academy. His medical education was received at Bellevue Hospital Medical College, where he graduated in 1873.

He was a member of the Medical Society, County of Kings, from 1874 to 1915, the Associated Physicians of Long Island, 1909-1915, Brooklyn Camera Club and the Greenpoint Taxpayers Association.

He was the son of John C. Griffing and Mary R. Smith. His wife was Mary A. Pollock, who died in 1913.

## PHILIP M. WOOD, M.D.

Dr. Wood was born in Brooklyn, N. Y., in 1855, and died at Jamaica, L. I., March 27, 1915. He was the son of William D. Wood, M.D., and Mary Ann Wilson. His medical education was received at Bellevue Hospital Medical College where he received his degree of M.D. in 1876.

He was a member of the Queens-Nassau Medical Society of which he was president in 1910, Medical Society of Greater New York, Associated Physicians of Long Island, 1899-1915. He was for a time physician to the Mineola Hospital and surgeon to St. Mary's Hospital, Jamaica, of which he was president.

He was also president of the Board of Sewer Commissioners, Director of the Bank of Long Island and the Jamaica Savings Bank, a member of the Chamber of Commerce, Borough of Queens and Jamaica Lodge, F. & A. M.

He is survived by his widow, Minnie Betz Wood, and a daughter, Elsie Weber Wood. W. S., Sr.

## WILLIS HENRI PHILLEO, M.D.

Dr. Phileo was born in Lyndon, Illinois, October 19, 1863, and died in Brooklyn, N. Y., April 11, 1915. He was the son of Addison J. Philleo and Jane E. Fannell, both of New York. He was married on April 20, 1892, to Marguerite L. Milan.

Dr. Philleo was educated at the Normal and High Schools, his medical education being at the New York University, where he received the degree of M.D., in 1888.

He was a member of the Medical Society, County of Kings, from 1894-1915, American Medical Association, Associated Physicians of Long Island, 1906-1915, Brooklyn Pathological Society, Brooklyn Medical Society, 1895-1900, National Geographic Society and Acanthus Lodge, No. 719, F. & A. M. W. S., Sr.

## P. VANBENSCHOTEN FOWLER, M.D.

Dr. Fowler was born in Newburg, N. Y., February 6, 1866, and died at Brentwood, L. I., Sept 14, 1915. He was the son of C. G. Fowler and Elizabeth DuBois, both of New York. Dr. Fowler was married on November 22, 1900, to Matilda P. Donaghy. The result of this union were the following children: Charles Gilbert, Frank Bowman, Margaret Donaghy, John DuBois, and Elizabeth DuBois Fowler.

His early education was obtained at the College of Springfield, Mass. His medical education was under the direction of Charles H. Gibbins, M.D., and completed at the Medico Chirurgical College, of Philadelphia, receiving the degree of M.D., in 1897.

He was physician to the Samaritan and Babylon Hospitals and a member of the Suffolk County Medical Society, American Medical Association, and the Associated Physicians of Long Lsland, 1900-15.

W. S. Sr.

## KENNETH FRANK JUNOR, M.D.

Dr. Junor was born in Ontario, Canada, August 31, 1846. and died at Toronto, Canada, September 26, 1915. He was the son of Kenneth and Christian Junor. He was educated at Toronto University and in theology at the Union Theological Seminary. His medical education was at the University of New York, where he received his degree of M.D., in 1886.

During his professional life he was physician to the De Milt and Bellevue Dispensaries, Manhattan Eye and Ear, and Harlem Hospitals. He was a member of the New York Academy of Medicine, The Kings County Medical Society, 1900-10, Associated Physicians of Long Island, 1912-14, Academy of Sciences, N. Y., Fellow of the Society of Science of London and Canadian Institute. W. S. Sr.

## HOMER GEORGE NEWTON, M.D.

Dr. Newton, formerly in practice in this city, died at Sherburne, N. Y., October 11th, 1915. He was born in 1835, and received his early education at Yale University, graduating A.B. in the class of 1859, and A.M. in 1868. His medical education was received at the University of New York. The degree of M.D. was conferred in 1863. This was followed as surgeon in the army. Upon his return to Brooklyn in 1866, he, with other physicians, organized what is known as the Brooklyn Eye and Ear Hospital. From 1866 to 1875 he was a member of the Medical Society, County of Kings.

W. S. Sr.

## JOHN TYNDALL GIBBONS, M.D.

Dr. Gibbons was born in Brooklyn, where he died October 2, 1915. Educated at St. Patrick's Academy, and graduating M.D. from the College of Physicians and Surgeons in 1889, during his professional life he was surgeon of the 4th Reg't, served in the Spanish-American War, was surgeon to St. Catharine's, Bushwick and Central Throat Hospitals and Home for the Blind. A member of the Medical Society, County of Kings, 1894-1900, Brooklyn Medical Society, 1894-1915, Associated Physicians of Long Island, 1900-15, German Medical Society, Association of U. S. Military Surgeons. W. S. Sr.

## ERASMUS DARWIN SKINNER, M.D.

Dr. Skinner was born in Greenport, L. I., January 24, 1838, and died at Hempstead, L. I., September 21, 1915. He was the son of E. E. D. Skinner, M.D., and Mary B. Read, both of Connecticut. Dr. Skinner was married on April 27, 1862, to Anna E. Hallack of Greenport, L. I. Three children were born of this union: Henry W., Erasmus D. Skinner and Mrs. L. C. Underhill.

He was educated at the Franklinville Academy and the Berkshire Medical Institution, receiving the degree of M.D., in 1859.

During his professional life he held the position of coroner of Queens County, in 1872; health officer of North Hempstead, in 1880; surgeon to Nassau Hospital, a member of the N. Y. S. Railway Surgeons, Queens-Nassau Medical Society, of which he was president in 1886, and the Associated Physicians of Long Island from 1899-1915, a member of Roslyn Lodge, I. O. O. F., and Marton Lodge, F. & A. M.

W. S. Sr.

# Society Transactions

## TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

*Regular Meeting of the Society held at the Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Thursday, January 7th, 1915.*

The President, JAMES C. KENNEDY, M.D., in the Chair.

### Program.

*Clinical Meeting.*

1. A case of Traumatic Carcinoma of the Abdominal Wall and Viscera. .................................. J. J. Collins, M.D.
2. Four cases of Abdominal Injury ....................W. A. Gillen, M.D. Discussed by Drs. Raymond P. Sullivan, Edwin H. Fiske and James M. Downey.
3. (a) A case of Meningocele in a Child. Patient.
   (b) Bands of Adhesions.
   (c) Traumatic Epilepsy.
   (d) Gangrene of the Intestine.
   (e) Two cases of Nephrolithiasis.
   ..........................................E. A. Parker, M.D.
4. Report of Operations for Paralytic Deformities of the Foot, four patient's (Whitman's and Hoke's Operations), and one additional case of Equinovarus (not on program), with patient. .......................... Walter Truslow, M.D.

JAMES C. KENNEDY, M.D., President. ROGER DURHAM, M.D., Secretary.

### Four Cases of Abdominal Injury.

*W. A. Gillen, M.D.*

CASE I. Male, 26 years, s., Russia, machinist.

Admitted to St. Mary's Hospital at 11 p.m., with the history of having been struck by an automobile while riding a motorcycle at 10:30 p.m. On admission his temperature was 99°F. and his pulse 90. I saw him one hour after admission when his temperature was still 99°F. His pulse had risen at that time to 106 but was of good quality. His chief complaint was pain all over the abdomen. He was vomiting frequently and forcibly and complained greatly of thirst. Physical examination showed a scaphoid abdomen with generalized tenderness and board-like ragidity. He was taken to the operating room at 12:30 and under ether anaesthesia the abdomen was opened through a right rectus incision at the level of the umbilicus. Free blood and intestinal contents escaped on incision of the peritoneum. The blood had a granular appearance sometimes associated with rupture of the spleen but that organ was found intact. The liver and stomach were found uninjured. On tracing down the small intestine, at about the middle of the ileum the gut was found torn from its mesentery for a distance of six inches, with a perforation about the size of a dime at its mesenteric border, from which feces were escaping. The segment of gut deprived of its mesentery was very dark in color. This portion I resected and did a lateral anastomosis on. Tracing the small gut further, about three feet above the ileo-cecal valve, there was another small separation of the gut from the mesentery. This I thought could be repaired without a resection but the color of the intestine was bad and on looking for the reason, I found just a couple of inches below, another separation of the gut from its mesentery for a distance of eighteen inches. By this time, although we had been as gentle in our manipulations as possible, the patient had passed into condition of extreme shock. In view of this condition, I thought it unwise to attempt another anastomosis, so I simply resected the portion of gut from which the blood supply was cut off and bringing the two ends into the wound, sewed them there, making an artificial anus. The peritoneal cavity was then sponged out as clean as possible, rubber tube drainage inserted and the abdomen closed. The patient lived for twenty hours after the operation, but never recovered from the profound shock. Following operation he vomited a few times but not severely and after six hours was able to retain water. This patient showed no external mark of violence of any kind.

Case 2. Male, 7 years, United States, school.

Admitted to St. Mary's Hospital, with the history of having fallen out of a tree in Canarsie. On examination, about eight inches of small intestine were found protruding from a wound of the abdominal wall. On the operating table, this wound was found to be elliptical in shape, about ¾ of an inch in length and to follow the border of the umbilicus. The defect in the abdominal wall was lengthened by an incision through the right rectus and the intestine replaced. The intestine through its entire length was very much distended. This distention became progressively worse and we were unable to obtain any relief. The patient died in ten hours.

Case 3. Male, 45 years., m., United States, laborer.

Admitted to St. Mary's Hospital, with the history of having been squeezed between a wall and an automobile at 10 a. m. At the time of the injury he was taken to a hospital here in Brooklyn where he says he was examined by one of the house doctors, who told him he could find nothing the matter with him. He said he did not feel as if he was very badly hurt, so he returned to work where he remained until 5 p. m. When he got home he began to feel sick and to vomit. He was then removed to St. Mary's Hospital, where I saw him. His abdomen was moderately distended and he had a moderate degree of tenderness and rigidity. The abdomen was opened through a right rectus incision and intestinal contents found free. Just under the incision, there was seen a rupture of the small intestine, with intestinal contents escaping. This was sutured. No other injury was found, so the abdomen was sponged out as dry as possible, a rubber tube drain inserted and the incision closed. The patient developed an intestinal paresis and died in twelve hours.

Case 4. Male, 21 years, s., Italy, laborer.

Admitted to St. Mary's Hospital at 11 p. m., with the history of having been shot. Examination showed the wound of entrance to be in the left rectus at the level of the umbilicus. There was a plug of omentum in the opening but blood escaped with every respiration. The abdomen was opened and a large amount of blood mixed with intestinal contents evacuated. The small intestine was traced down and eight perforations were sutured in the gut itself and four in the mesentery. In several instances, the bullet traveled along the length of the intestine, so that the wound of entrance and the wound of exit were on the same side. The abdomen was sponged out, a rubber tube drain inserted and the incision closed. The bullet was not located.

All of these patients were given pituitrin post-operative, but we did not get any result unless in the last case.

I am indebted to Dr. John D. Sullivan, on whose service all of these cases were, for the privilege of reporting them.

## A Case of Traumatic Carcinoma of the Abdominal Wall and Viscera.

*J. J. Collins, M. D.*

This patient, D. M., 47 years of age, an Italian, by trade a barber, gave a history that while riding in an open car in the latter part of May, 1914, standing between the seats, the car collided with another and the patient was thrown forward with such force as to break the seat in front of him and he has been ill ever since. For a few weeks he was confined to the house and then went to the country. He was referred to me and came to my office on August 7th, 1914. He was a man about 6 feet in height and in May, 1914, his weight was 240 pounds. His weight at this time was 170. He complained of distress in the abdomen. The bowels move only with cathartics and the movements, although formed, are small in caliber.

Examination revealed a longitudinal scar of the abdomen, two inches in width; in the lower part of the abdomen, across the entire abdomen beneath this, there was found a mass about twelve inches in diameter. This mass is not movable.

Operation was advised and in September the patient went to St. Mary's Hospital. At this time the abdomen was very much distended and the patient had been vomiting, but had had no bowel movement for three days. He had pain in the left side of the abdomen. High enema relieved the distention, but no fecal matter was returned. Two more enemas were given with no result. The vomiting continued and the abdomen became more distended. The man was operated upon the 27th of September, incision in the left rectus muscle opening the peritoneal cavity upon a mass involving the peritoneal peritoneum, omentum and coils of small intestines. This mass is adherent to the left lateral abdominal wall also and is immovable. By blunt dissection the centre of the mass is opened and much necrotic material is drained off. Tubes and iodoform gauze were used for drainage and the abdomen was closed. The patient left the table in poor condition and died about twelve hours later.

Pathological examination of the tumor was made by Dr. Hulst and pronounced adenocarcinoma with colloid degeneration.

## Meningocele.

*E. A. Parker, M.D.*

The first case is a case of meningocele. The child is now about 2 years and 3 months of age and was operated upon when 3 weeks old. Operation consisted of separating the meningocele and making a periosteal flap over the defect.

## Bands of Adhesions.

*E. A. Parker, M.D.*

The next case is that of a child 13 years of age, who was born in Virginia and whose illness started at the age of 4 years following an attack of whooping cough. Since that time the child has been constantly in poor health and has been unable to lie on the left side. If he were alseep and turn over on the left side, sudden nausea and vomiting would invariably awaken him. He has had from one to as many as six seizures a day. No blood has been noted in the vomitus. Occasionally the stools were clay-colored. For the past five months he has been troubled with vertigo, which frequently lasted as long as 12 hours and which is not relieved by any drugs or change of position. He has had previous attacks of nausea, and every morning he would also have a dull aching pain from the seventh cervical to the base of the occiput.

Dr. Williams X-rayed and screened him and found the pylorus to be pretty well up and the stomach itself dilated. He figured that the child had pylorospasm. There was pylorospasm, due to adhesions. There was one band that spread across the cystic duct and another band to the right of the liver, through which the right lobe of the liver could glide and would then get caught, accounting for the child getting nausea and vomiting while he was on the left side. The appendix itself was small and bound down by adhesisons, but as far as we could see, it had never been inflamed. The appendix was removed and the band across the cystic duct was cut, the band across the liver was cut likewise a long band down the cecum. The patient was operated on last Monday and since the following day there has been no vomiting or nausea.

## Traumatic Epilepsy.

*E. A. Parker, M.D.*

The next case which I have to report is one of traumatic epilepsy, the history of which is as follows:

Patient, F. G., female, age 20. When 9 years of age she fell from a window, fracturing her skull. She was trephined, but the button was not replaced. Three years after the accident she was taken with epileptic seizures, three or four a week. She would go for six months without an attack. For two years past she has had attacks as often as ten times a day. There is a spastic gait. Hernia cerebri present.

The patient was operated upon January 12th, 1914. The scalp was separated from the brain, disclosing a cyst. The margin in the defect of the bone was freshened and a tendinous periosteal flap was placed, the tendon-side contracting with the brain. December 15th, 1914—no seizures since operation. The defect is absolutely covered with new bone and the patient is apparently in perfect health and is at present employed as a domestic.

The spastic gait has improved.

## Gangrene of the Intestine.

*E. A. Parker, M.D.*

This case is one of gangrene of the intestine. The history is as follows:

Patient, I. G., age 29, male, butcher by occupation, born in Russia, married. One year ago he was operated on for appendicitis.

On July 13th, 1913, at 6:30 a. m., he was seized with cramps which increased in severity. He vomited two or three times. The bowels moved three times when the attack began. The abdomen became distended and the patient was admitted to the hospital in the evening in semi-shock. The pain was paroxysmal, beginning in the upper right quadrant, increasing in severity and to the old scar.

On July 13th, 1913, p. m., laparotomy showed the ileum to be gangrenous from near the ileocecal valve approximately for a distance of five feet. The gangrenous portion was resected, and a lateral anastomosis made. The gangrene was caused by a band hugging the mesentery. When incised, the mesentery did not bleed. The vessels were thrombotic. The patient made an uninterrupted recovery, and in November, 1914, he was in good condition other than for occasional abdominal pain.

## Nephrolithiasis.

*E. A. Parker, M.D.*

The next case, one of nephrolithiasis, was admitted to my service at St. Mary's Hospital on January 5th of this year. Patient, H. Z., age 29 years, single, male; nativity, Austria; window shade worker by occupation. At that time we had two cases, this man and a child who was run over by a wagon. The child showing symptoms of increasing hemorrhage, we sutured the kidney. We left the man alone as the symptoms in his case cleared up well. The X-ray showed numerous stones. Cystoscopic examination showed blood in the urine coming from the left side. The man was operated on yesterday through the ordinary lumbar incission and an enormous kidney, with practically no good healthy kidney substance, packed with calculi, was removed. Up to the present he is doing well. The history of the case is as follows:

The present illness began 6 years ago with a history of trauma to the left kidney. The patient struck this area by falling from a tree (a fall of 2 feet). He had bleeding on urination after this, but it cleared up by rest. For three years he has had irregular bleeding attacks. The urine was always cloudy. Frequency of urination was noted soon after the fall, while before this the patient gave a normal history.

The other case was also one of nephrolithiasis in a man who had

had one kidney removed 19 years ago following an injury. He developed a stone in the pelvis of the remaining kidney. The X-ray showed a stone in the pelvis. There being but one kidney, we removed the stone under local anesthesia. The operation was done August 26th, 1914, and the man is now back at his business as a barkeeper.

### Equinovarus (Case not on Program).

*Walter Truslow, M. D.*

Dr. C. C. Nichols has been kind enough to let me show a patient tonight. I do so to present the great disability before correction. Nothing has been done for this child in an operative way and the great disability is that of a deformity that hasn't yet reached the stage at which there is much return of muscle power; but it has a tendency, as you see, toward equinovarus. I haven't seen the case, but I should say that this is to be considered not yet operative.

### Four Cases of Abdominal Injury.

*W. A. Gillen, M. D.*

Dr. Raymond P. Sullivan, in opening the discussion, said:

"I would like to report a case somewhat similar to those reported by Dr. Gillen, which was admitted to the Holy Family Hospital on New Year's morning with a history of having been thrown from an automobile against an elevated post and afterwards run over by the same automobile. He was admitted to the hospital at 5:30 a. m., with a temperature of 99 and a pulse of 82, and at 6:30 the pulse jumped to 130 and his abdomen became very rigid and very tender. I saw the case at 9:00 o'clock. His pulse had come down to 96 and his temperature still stayed at 99. His abdomen was very rigid—boardlike rigidity. Complained of intense pains all through the abdomen. Urine was negative for blood. White cell count 16,000. Polynuclear 70%. There seemed to be more tenderness in the right iliac fossa.

"The previous history of the man seemed interesting. He was one of the United States Army aviators with a history of six months previously having fallen from an aeroplane on Staten Island a distance supposed to be about 2,200 feet. He got away with that accident by refusing operation. He also refused exploratory laparotomy with us and even refused enemas at first. At the time we thought that there might be a fecal impaction but whether it be in the caecum or rectum we were unable to say.

"About 10:00 o'clock I saw him again and asked Dr. Fiske to examine him with me. We couldn't disagree that he had some intra-abdominal injury. The patient went on with refusal of operation and all treatment, saying there was nothing the matter with him. His pulse jumped to 100. At 2:00 p. m., he consented to an enema which resulted in a very large constipated bowel movement. At 6:00 he had another enema which also resulted in a large bowel movement. No blood could be found. His general condition improved greatly. Pulse now 92. He signed a release and walked out of the hospital the next morning after having two bowel movements and no operation.

"I heard from his New York physician the next day, whom I asked to keep in close touch with the case and he said that he was back on his job and up in his airship again that day.

"I think it is interesting in contrast with the severe abdominal injuries were reported by Dr. Gillen. The question is: Were we justified in wishing to make an exploratory laparotomy in that case?"

Dr. Edwin H. Fiske, in discussion, said:

"Fortunately I was, through the courtesy of Dr. Sullivan able to see the patient of whom he has just spoken and for years and years it has been my experience to have cases under my own care and to see cases under the care of others who have had abdominal traumatism and who have been thought by us and by others to have been free from any intra-abdominal injury—something that has happened to us all.

I am only saying this because it influenced my opinion in this case. We have all seen abdominal injuries that showed very few symptoms. I was unfortunate in not hearing the cases reported by Dr. Gillen tonight as I would like to have heard them. But I have seen many cases in which the abdominal symptoms were almost nil and some of them have been allowed to go for twelve, twenty-four or forty-eight hours without operation and my experience is not unique in that regard. The cases have been operated on when it was too late.

"Last year in looking over the abdominal injuries taken care of during the seven years that I have been in the Kings County Hospital, I found that the great majority of them died and that the great majority of cases of abdominal injuries were not operated upon for twenty-four and forty-eight hours after the accident; that is, cases where the abdominal injury was of a contusion type and not of a stab wound or a gunshot wound. Something like 80 per cent were not operated upon for twenty-four hours and something like 90 per cent died.

"I have made up my mind where I am at all suspicious to advise strongly for operation, and if the patient does not accept operation and if anything serious develops, I feel I am not responsible for the case.

"I have seen a number of cases where the symptoms were no more marked than in this case of Dr. Sullivan's where we found such things as the intestine stripped from the mesentery, gangrene of the intestine, ruptured bowel, and in this case, if Dr. Sullivan, through my additional advice, had explored we would have said it was too bad and the man would have perhaps suffered. If I am to follow the impression that that case made upon me I am sure that I will have subsequent trouble with my abdominal injuries; so, in a case that, instead of changing our opinions in regard to contusions of the abdomen, we should explore in the early stages. If no damage has been done it will do them no harm. If they have been injured that is the time to operate on them—when they show symptoms."

Dr. James M. Downey, in closing the discussion, said:

"I have had one case which might be of interest along the line of those spoken of by Dr. Fiske and Dr. Sullivan—that of a man who dropped fifty feet from the mast of a ship into an awning and landed on his back. The only mark which he had was a small contusion over the buttocks about the size of a silver dollar. He was taken to the hospital and I happened to be present at the time. He had marked rigidity over the abdomen and increased pulse rate with a subnormal temperature, 97. After waiting about an hour I went away as I had something else to attend to. I came back to see him and found him with increased pain, more rigidity and the pulse rate also was increased. I had him removed to the operating room where I opened him up and found three perforations of the cecum, one the size of a dime and two other small perforations. I am sure that if he had been allowed to go for twelve or fourteen hours he would have gotten up a general peritonitis and died.

"I think, as Dr. Fiske and Dr. Sullivan have said, that exploratory laparotomy is necessary in all cases where there is rigidity and marked tenderness, especially if the pulse rate is increased and increases from the time of the accident and continues to increase for a definite period."

## Operations for Paralytic Deformities of the Foot.

*Walter Truslow, M.D.*

The foot is most involved in the residual disabilities of infantile paralysis. Of the many foot deformities two only—talipes calcaneo-valgus and talipes equino-varus—will now be discussed. Contrary to the anatomical teaching, the normal motions of the foot are divisible into three instead of four, namely; plantar flexion, by the use of the calf muscles; dorsi-abduction, by the use of the peronei and some of the toe muscles, and dorsi-adduction, by the use of the tibials and some of the toe muscles. Insufficiency or paralysis of the calf muscles leads to the deformity of calcaneo-valgus. The foot is very unstable; the patient, if able to walk at all, places the weight upon the inner border of the foot and one gets the appearance of exaggerated flat-foot. Insufficiency of the peronei group leads to the deformity of talipes equino-varus. The patient walks on the outer border and even on the dorsum of the foot. The disabilities of any of these deformities are due in part to the actual muscle weakness and in part to the pain and sometimes to the pressure sores incident upon faulty weight-bearing.

The treatment of these deformities has been largely that of bracing and muscle development, and a certain amount of improvement has followed this procedure. More recently operative procedure has been undertaken. Tendon transplantation—or the transference of the distal end of a strong muscle into or near the insertion of the weakened muscles—has been much used. It still has its advantages. The most recent tendency of orthopedic surgeons is to make such *bony* changes as will insure more normal weight-bearing and cause such reinforcing material as may be used to extend from bone to bone; instead of depending upon muscle pulls to correct and to keep the deformities corrected. In other words, it is a recognition that in these weakened joints stability for weight-bearing is more important than ideal muscular action.

The deformity of talipes calcanco-valgus—insufficiency of calf muscles—is perhaps the most disabling of all the paralytic foot deformities. Studying the mechanics, Royal Whitman observed that if the short lever arm of the os calcis could be lengthened and the ankle-joint itself be made less mobile, the efficiency of whatever calf muscle power is present or could be reinforced would be much greater. He devised, therefore, the operation of astragalectomy and posterior replacement of the foot with reinforcement, by the use of transplanted peronei muscles, inserted into the os calcis.

CASE I, V. N. *Talipes Calcaneo--Valgus.* Age, 10 yrs.

*Attack* at 2 yrs (8 yrs. ago).

*Residual deformity:* Due to insufficiency of calf muscles.

*Whitman operation:* June, 1914

Astragalectomy; posterior replacement and slight plantar flexion of foot; transplantation of peroneus longus and brevis into insertion of tendo Achilles; plaster of paris dressing. Subsequent high heel.

*Result:* A flail-like, unstable joint made into an efficient, firm joint.

N. B.: Some limp remains because extensors of knee slightly less than normal. But the stiffened ankle makes walking reasonably firm; and this activity will develop the quadriceps extensor groups.

CASE II., Alfred G. *Talipes Calcaneo-Valgus.* Age: 9 yrs.

*Attack* at 2 yrs., seven yrs. ago.

*Residual deformity* and motive inability due to insufficiency of calf muscles.

*Whitman operation:* July, 1914.

Astragalectomy, etc.

*Result:* Walks much better, with heel raised; also both sole and heel raised, as limb is 1½ inches shorter.

N. B.: There is insufficiency of left hip and knee. A brace will hold this better, but the stability of the foot makes far much greater efficiency in walking.

Even with frail joints or ankle-joints which have little or no controlling muscle power, this operation affords a large degree of stability for walking. The only permanent apparatus necessary is the elevated heel to the shoe to insure plantar flexion to the foot.

The other foot deformity which is now reported—paralytic talipes equino-varus—is also very disabling. It is due to paralysis or insufficiency of the peronei group of muscles. Here the secondary, unopposed contractions of the calf muscle, the tibial muscles and of the plantar muscles of the foot, cause the deformity which greatly simulates this variety in congenital club-foot. A number of operations have been devised for this, as for congenital club-foot. Phelps' operation of cutting all restricting bands on the inner sole and of going half way through the mid-tarsus and forcing the foot open, as it were, allowing the wound to heal by granulation, has been much used. Others have taken a wedge-shaped piece of the outer upper border of the mid-tarsus, forcing the closure of the gap and thus restoring the general shape of the foot. Michael Hoke, of Atlanta, studying this deformity, noted that it centered more nearly at the neck of the astragalus; and that the entire foot being narrower at that point, a much smaller wedge-shaped piece of bone could there be removed and the resulting shortening of the foot could be greatly lessened.

The following cases are thus reported:

CASE III., Mary B. Through the courtesy of Dr. Wolfort, Assistant Orthopedic surgeon at Kings County Hospital, who performed the operation. *Right Talipes Equino-Varus, Left Talipes Equino-Varus.*

Age, 10 yrs.

*Attack* at very early infancy.

*Residual deformity:* Right, walks on outer border of foot; tends to spread knees. Left, the same.

Former operation in Italy.

*Operation:* October 28th, 1914. By *Dr. Wolfort.* Modified Davis's operation.

Horizontal osteotomy through tarsus, over-correction of deformity, by shifting lower portion of foot (much force); #1 catgut. December 30th, 1914, plaster dressing removed.

*Result:* Much more stable joint; has not walked long enough to have confidence. Suggest *not* over-correction of deformity.

N. B.: Left foot must be done same way.

CASE IV., Robert S. *Talipes Equino-Varus.* Age: 12 yrs.

*Attack* at 6 yrs., six yrs. ago.

*Residual* deformity due to insufficiency of the peronei group of muscles, the boy walking on the outer border of the foot—a most unstable position—and further straining the weak muscles.

*Hoke operation:* November 4th, 1914.

Resection of the neck of astragalus, removing a wedge-shaped piece from the upper outer aspect; forcibly closing the space by reducing the deformity of the fore part of the foot, and sewing the adjacent periosteum together; reinforcing silk ligaments from external malleolus to outer border of foot (cuboid bone). Plaster of Paris dressing.

*Result:* The boy walks and runs on the sole of his foot strongly; does not need brace.

CASE V., Morris Halpin. *Left paralytic talipes equino-varus.* Age: 8 yrs.

*Attack* at 6 mos., 7½ yrs. ago.

*Residual deformity;* insufficient peronei.

A year ago, *operation at Ruptured & Crippled Hospital, N. Y.*—probably transplantation of tibialis anticus into cuboid.

*Second result:* Recurrence of deformity; walks on outer border of foot.

*Operation:* 21st October, 1914.

Osteoplasty of neck of astragalus—shortening of tendon of peroneus longus; silk ligaments; shortening of skin by removal of crescent-shaped flap; plaster paris dressing. Some infection. Plaster removed 6 weeks.

*Result:* Can walk and run firmly on sole. Does not need brace.